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Doherty Plan For Regulating Production Bobs Up At Convention

By V. B. Guthrie

STAFF REPRESENTATIVE

FORT WORTH, Dec. 11.

DAMPNESS emanating from the board of directors' room necessitated calling off the impromptu fireworks display which many had hoped would end the convention of the American Petroleum Institute today in a blaze of glory.

The institute directors, because of inability to find a place for it on the already full program, decided the open debate between Henry L. Doherty, head of large public utility and oil interests, and opponents of his plan for state regulation of production to the end future oil pools would be developed as units, could not be held as a climax to the Fort Worth convention.

J. Edgar Pew, vice-president of the Sun Oil Co., was elected president of the institute, succeeding T. A. O'Donnell. Mr. Pew makes his headquarters in Dallas, which gives the Mid-Continent territory a representative as head of the institute. Mr. Pew has been an active leader in the institute's standardization work.

Directors announced the next meeting would be held in California, the exact time and place to be decided later.

That there would have been great interest in the debate was indicated by the applause from the floor of the house when Mr. Doherty, after listening to criticism of his plan from President O'Donnell of the institute and A. L. Beaty, president of The Texas Co., asked for the floor to reply briefly and then asked that a debate be arranged as a part of the institute program at the present meeting.

Institute directors, however, decided that the three days arranged for the meeting were already too filled up to allow such a readjustment as the debate would call for. They announced consideration of the plan had been postponed, Mr Doherty concurring in the postponement It was first talked that the debate would be held in New York later before directors of the institute and invited guests: Later it was decided to consider the Doherty plan at a meeting of directors of the institute called for Colorado Springs, Feb. 7.

From the standpoint of attendance, interest in the frank discussions of the present status of the business, accomplishments at the various group meetings and hospitality shown the visitors by oil men in Fort Worth, the sessions which ran three days, ending today, were far away the most successful the institute has ever held.

Mr. Doherty's plan came in for criticism at the two general sessions the first day, President O'Donnell commenting upon it in his address opening the meeting and A. L. Beaty, president of The Texas Co., criticizing it in more detail in the course of his address in the evening. That address was carried in the preceding issue of this publication.

It will be recalled that Mr. Doherty has broached the subject of state regulation of oil field development under certain definite plans, as being superior to the present system of practically unlimited individual or company initiative, in certain public addresses in times past.

At the convention of the National Petroleum Marketers Association in Cleveland a few weeks ago, Mr. Doherty outlined his plan in more detail than had previously been given except at meetings of the board of directors of the American Petroleum Institute. His plan, in substance, calls for no drilling except by state permit, and development of oil territory to be carried on on a community of interest plan even to land and royalty owners.

In his Cleveland address Mr. Doherty further charged that directors of the institute had sidetracked his plan without giving it due consideration. It was evidently this point that caused his plan to come in for comment at the institute session.

President O'Donnell stated his objection to such regulatory legislation of any kind as being inimical to the best interests of the industry in its fast-changing phases of development. He illustrated it by giving the experience of operators in California, who drew up their plans for such laws, under the threat that, unless they did so, the state assembly would write its own laws.

"We didn't realize, when we drew up our own laws, that we could not have

California Next

FORT WORTH, Dec. 10. —The next annual meeting of the American Petroleum Institute will be held in California, it was announced today by directors. The California representatives of the institute tried to secure this year's meeting for California and, failing in that, immediately set out to get the next meeting. The exact time nor place for the meeting has not been announced, but it is definite that it will be held in California.

the slightest influence in seeing that men of saneness and ability would be chosen to administer those laws," stated Mr. O'Donnell. "Ten years of this system has cost the industry and the public millions of dollars needless expense."

Mr. Doherty, in the audience, listened to Mr. O'Donnell's comments without reply. After Judge Beaty had concluded his address in the evening in which he dissected and analyzed the plan point by point, Mr. Doherty asked for the floor and, speaking from his seat in the house, stated there were some points in Judge Beaty's remarks that he desired to answer.

"Judge Beaty has described the oil business as being in a sane and healthy condition, able to work out its own remedies for present ills," stated Mr. Doherty. "I do not agree with him. For the last three years many oil companies have lost money. I want to see things fixed some way so that they will not continue to lose money."

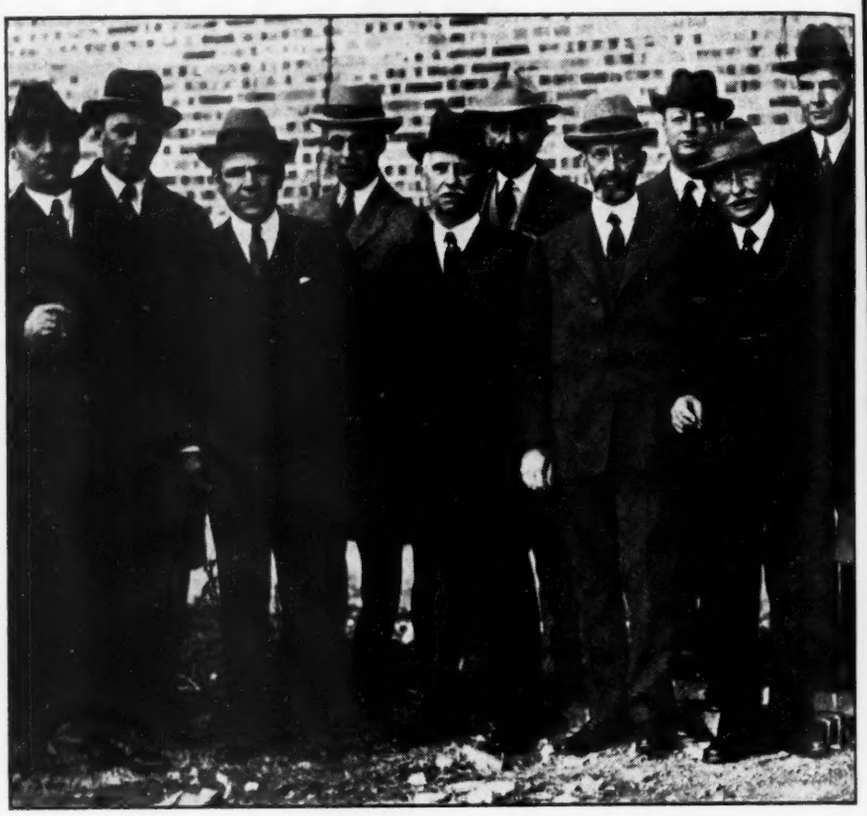
Mr. Doherty then suggested a joint debate on his plan as a part of one of the institute sessions, he himself to argue in its behalf and to be given as much time as opponents of the plan took up. The applause indicated the suggestion caught the approbation of the house and the directors were instructed to arrange a time on the program.

Discussion Is Frank

One outstanding feature of the meeting was the dominating part discussion by leaders of the industry on its present ills took on the program. Their addresses were not given in general terms, as in the past, but went into pretty frank analysis, the speakers evidently appreciating that the American Petroleum Institute is the proper forum to bring freely their ideas as to the causes for the present ills of the business.

For example, it is highly significant of the regard in which the institute meetings are coming to be held when two such speakers as President Teagle, of the Standard of New Jersey, and Judge Beaty of the Texas Co., each in the course of their addresses comment upon the part our crude stocks may play in the readjustment of the business in terms which only a few years ago would have been held to their own respective circle of directors.

An Imposing Group Of Notables



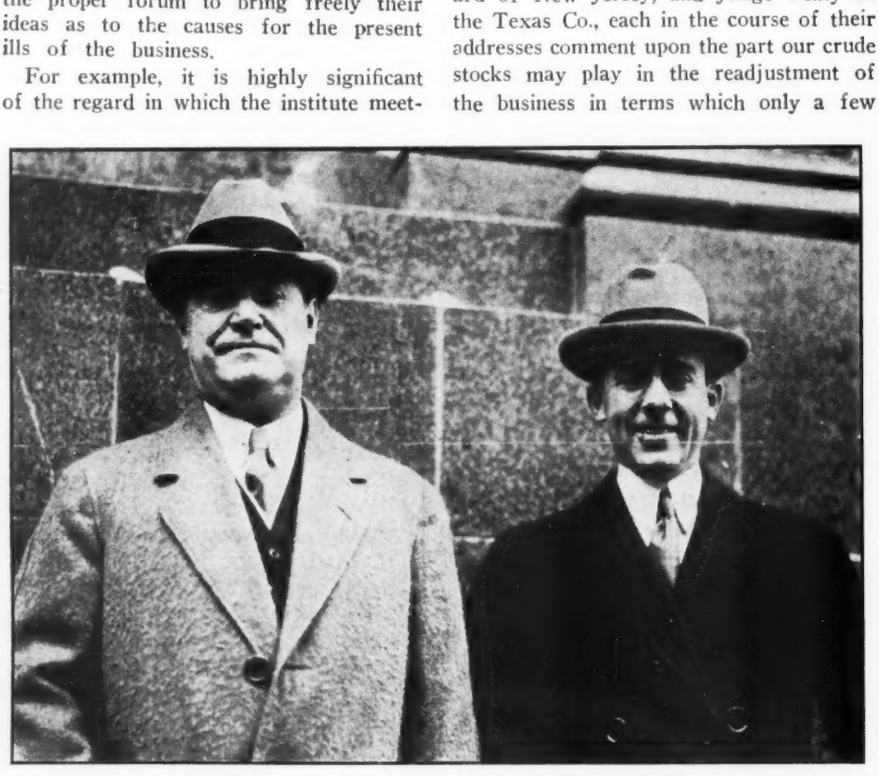
Left to right: E. J. Sadler, vice-president Standard Oil Co. of New Jersey; Walter C. Teagle, president, Standard Oil Co. of New Jersey; Harry C. Weiss, vice-president Humble Oil & Refining Co.; Waite Phillips, Mid-Continent Producer; J. C. Donnell, president Ohio Oil Co.; Amon G. Carter, president Fort Worth Star Telegram; W. N. Davis, president Mid-Continent Oil & Gas Association; W. S. Farish, president Humble Oil & Refining Co.; Edward Prizer, chairman of board, Vacuum Oil Co.; Amos L. Beaty, president, The Texas Co.

"I would not, if I could, create undue optimism," stated Judge Beaty. "I should dislike to see too much drilling activity until stocks are reduced and we are running on an even keel."

"Even now we may be following the same path traveled at this time in the past two years, and is it not apt to lead us to the same condition in which we found ourselves in the last two successive summers?" asked Mr. Teagle.

"During the past few weeks, the consumer demand for crude has apparently been in excess of the daily supply, and some slight draft has been made on reserve stocks. Premiums are being offered and, if precedent is followed, posted prices may be advanced to meet them. A posted price that would stimulate drilling might increase production and thus force the industry to continue on a fuel oil basis. A price for fuel oil under existing conditions so high as to materially curtail its consumption would have the same effect as an increase in crude production. If there is anything the industry does not need or is not going to need the next summer it is another flood of oil."

Mr. Teagle went on to point out that the industry often overlooked the fact that crude stocks were built up primarily in anticipation of a shortage and at costs higher than prices which have pre-



Harry F. Sinclair, and C. E. Crawley, vice-president Sinclair Consolidated Oil Corp.

At The Fort Worth Convention

Frank Phillips, president, Phillips Petroleum Co.; W. G. Skelly, president Skelly Oil Co.; K. R. Kingsbury, president Standard Oil Co. (California); G. B. Hunt, senior vice-president Standard Oil Co. of New Jersey; C. O. Stillman, president, Imperial Oil, Ltd.; R. L. Blaffer, vice-president Humble Oil & Refining Co.; James A. Moffett, Jr., Standard Oil Co. of New Jersey; W. C. Brower, manager crude oil division, Vacuum Oil Co.; Northrup Clary, Standard Oil Co. of New Jersey

vailed since. No shortage having developed, or being in sight at the present time, he inferred that the oil companies might find themselves forced to reduce their stocks to lighten their burden, even at prices less than the cost of those stocks.

Both President Teagle and Judge Beaty defended the cracking patents held by their companies and others under a common pooling arrangement. "There is no company or group of companies that controls all cracking processes," said Mr. Teagle, "Any refiner can not only install cracking equipment, but may have his choice of a score or more of proved designs, and if he prefers the type used by our company, it can be his upon a royalty basis which is far from burdensome." Judge Beaty said that agitation about cracking patents was pure bunk.

Judge Beaty took up the conditions now confronting the distributing branch of the industry in his address, saying the blame for over-expansion of stations and for the free gasoline pump evil was upon the big companies as well as the small. While he does not comment upon the immediate future he does see relief from over-expansion whenever production falls below consumption and the oil companies, with an excess of facilities through which to distribute their product, begin to close the least efficient of these.

For the first time in the institute's history the entertainment features were left practically entirely in the hands of local oil men. In the case of the Fort Worth meeting this innovation proved eminently satisfactory. Many of the oil men making their headquarters gave over the week, to say nothing of the time necessary for preliminary arrangements, to seeing that visiting oil men were taken care of. They arranged hotel accommodations, and sightseeing trips. Amon G. Carter, publisher of the Forth Worth Star-Telegram, entertained several hundred at dinner Dec. 8. The evening of Dec. 11 the Fort Worth oil crowd entertained all visitors to the institute convention at a real barbecue dinner and rodeo.

The climax of the efforts of the oil men of Fort Worth to entertain visitors attending the American Petroleum Institute convention came when the 2000 or more visitors were entertained at a barbecue dinner followed by a rodeo, which is Texan for a wild west show. This officially ended the institute meeting.

Statistics are lacking as to how many steers and porkers were sacrificed to feed the hungry hundreds but there were plenty. A judge of the common pleas court, who is known as one of the leading experts of the southwest in the art of barbecue cooking, adjourned court to devote the day to the preparation of the feast. He certainly justified his reputation.

The dinner, consisting of roast pork and beef, cooked on open fires, salad, vegetables, pie and coffee, was a rare treat to those from other parts of the country to whom such a meal was a new experience, while those who are accustomed to barbecues declared it was about the best of its kind they had ever enjoyed.

The rodeo was held in the Coliseum, built for such shows and for stock judging contests.

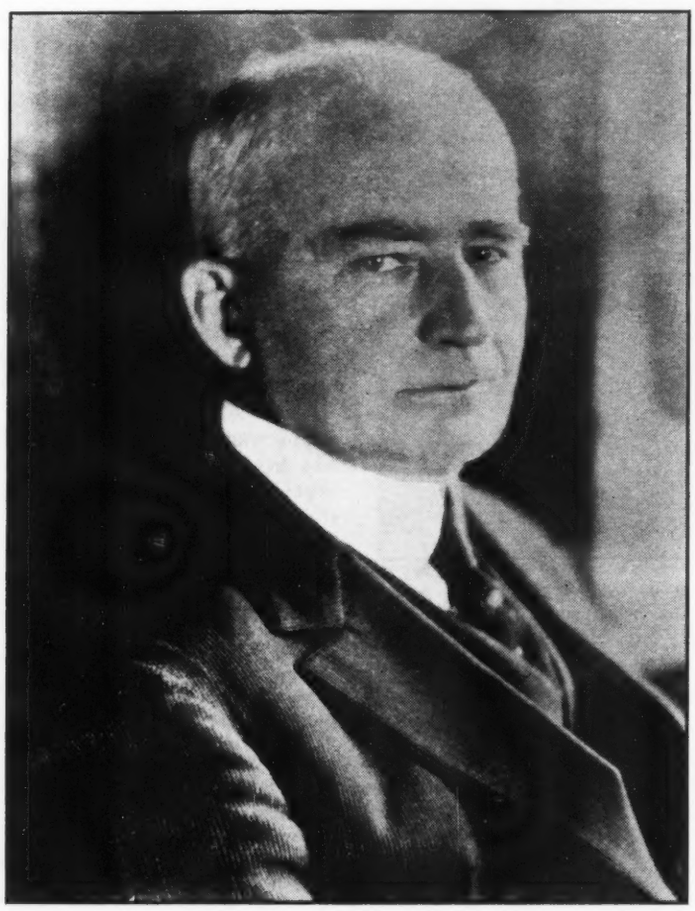
The feature of the show was a chariot race in which the drivers were J. Edgar Pew, newly elected president of the institute, R. L. Welch, general secretary and counsel of the institute and

S. Clark Reed, vice-president Oil Well Supply Co., Pittsburgh, gestures with his pipe to emphasize the point he is making to Henry J. Morlang, manager at Fort Worth for north Texas branches of the supply company, and an active figure in Fort Worth's arrangements to handle the Institute meeting.

Amon G. Carter, publisher of the Fort Worth Star-Telegram.

Each of the drivers was crowned with laurel or something and draped in flowing white robes which got in the way while driving. The chariots were drawn by teams of jackasses. The least ambitious team was that of Mr. Welch. In fact, he couldn't keep them up to any speed at all. After vainly appealing to their ambition, with the whip, Mr. Welch pulled out a book of directions and eagerly scanned its pages but it didn't seem to help.

The race was won by Mr. Carter and the best that Mr. Pew could do, driving hard, was to make second. Trick riding by cowboys and cowgirls, calf roping and tying, wild steer riding and bulldogging made up the show.



J. Edgar Pew, Dallas, vice-president Sun Oil Co., a long-established Mid-Continent operator who is new president of the American Petroleum Institute

Edger Pew New Institute President All New Officers Elected

FORT WORTH, Dec. 11

J. EDGAR PEW, president of the Twin State Oil Co., and vice-president of the Sun Oil Co., was today elected president of the American Petroleum Institute, succeeding Thomas A. O'Donnell, who had served since the Institute was organized five years ago. A complete new slate of executive officers was elected along with Mr. Pew.

The three vice-presidents elected today were: Edward Prizer, chairman of the board, Vacuum Oil Co., succeeding R. D. Benson; E. W. Clark, executive vice-president, Union Oil Co. of California succeeding Henry L. Doherty; and Frank Phillips, president, Phillips Petroleum Co., succeeding J. W. Van Dyke; A. L. Beaty president, The Texas Co., was named treasurer succeeding Harry F. Sinclair.

The following officers were re-elected. R. L. Welch secretary and counsel; W. R. Boyd, Jr., assistant secretary and counsel; and Lacey Walker, assistant treasurer.

Members of the executive committee for the ensuing year in addition to the officers named above, are: E. C. Lufkin, chairman of the board, The Texas Co.; A. C. Bedford, chairman of the board, Standard Oil Co. of New Jersey; R. W. Stewart, chairman of the board, Standard Oil Co. of Indiana; George S. Davison, vice-president, Gulf Oil Corp.; H. L. Doherty, president, Henry L. Doherty & Co.; William N. Davis, president, Mid-Continent Oil & Gas Association; and Thomas A. O'Donnell, ex-officio.

J. Edgar Pew, the new president of the Institute, is one of the real old-timers of the oil industry, having been in the business, as he admits himself, "since the memory of man runneth not to the contrary." He is one of a family of oil men, his three brothers being officers of the Sun Oil Co., of which he also is a vice-president. While they maintain their headquarters in Philadelphia, and have devoted most of their attention to refining and marketing problems, J. Edgar has always been in the producing division of the industry, and has been intimately connected with the development of the Mid-Continent field for the past 23 years. Coming to Beaumont, Tex., in 1901, when the Spindletop boom was just getting under way, Mr. Pew has followed the path of petroleum through Texas, Louisiana, Arkansas, Oklahoma, and Kansas.

While belonging to the old school of oil operators, Mr. Pew has not shared in the feeling evinced by some of them that old methods were good enough, nor has he been impatient with innovations introduced into the busines through the years. On the contrary, he has been in the front rank of the progressive element, always eager to advance the technic of the art, and an earnest advocate of improved methods of drilling and of production.

For more than two years past, Mr. Pew has worked indefatigably for the success of the standardization movement, with his principal interest devoted to the work of making oil field tubular goods uniform in size and thread, and interchangeable in the field, no matter what its brand. His efforts in this direction have been crowned with complete success, and he had the pleasure of presenting to the Institute at this meeting his final report, in which he announced that the casing specifications worked out by his committee had been

E. W. Clark, executive vice-president Union Oil Co. of Californin, new vice-president of the Institute

adopted by the directors of the Institute, and published as "A. P. I. Standard."

After living for many years in Beaumont, where he directed the activities of the old Sun Co., now known as the Sun Oil Co., Mr. Pew moved to Tulsa about 10 years ago, where for several years he was vice-president in charge of Mid-Continent developments for the Carter Oil Co., which was then just getting started in Oklahoma. Under Mr. Pew's direction, its activities were greatly expanded and it assumed a leading position in the industry. After leaving the Carter Oil Co., Mr. Pew returned to the Sun Oil Co., moving to Dallas, which is still his headquarters.

Frank Phillips, President Phillips Petroleum Co., new vice-president of the Institute

Industry's Campaign of Education Endorsed By The Institute

Staff Special a

FORT WORTH, Dec. 11

THE oil industry's public relations committee, which has been functioning the past few months with the purpose in mind of working out a method by which the industry would carry on a systematic campaign of education to the public and to its own members as well, was officially endorsed by the American Petroleum Institute, at a meeting of directors today.

The present form of the joint committee of association representatives and

Edward Prizer, chairman of the board, Vacuum Oil Co., new vice-president of the Institute

directors of the institute is to be retained, according to resolutions adopted by the directors, although its personnel may possibly be changed somewhat and the term of office of members of the committee is limited to one year.

The committee is authorized by the institute directors to raise by private subscription a special fund of $100,000 per annum, from the various branches and units of the industry, to be spent in the preparing and distributing the facts about the oil business.

The public relations committee came into being last summer, when a demand arose in some of the associations in the industry for a campaign of education. Representatives of all the associations, nine in number, met in the east at various times in connection with a group of directors of the institute and attempted to formulate a practical plan by which the facts regarding the oil business could be put before the industry and the public for its general education. It finally drew up a report after several deliberations, which is virtually the basis of the institute directors' report.

The resolution of the board of directors of the institute was as follows:

"(1) That for the purpose of accomplishing the regular and systematic publication of reliable information concerning the petroleum business a committee of members of that industry to be known as The Public Relations Committee be and the same is hereby created; the said Committee to be constituted and authorized to proceed in the following manner.

"(2) That the membership of said Committee shall be composed of nine members to be appointed by the president of the American Petroleum Institute from among the membership of that organization and one member to be officially designated by each of the following named oil trade organizations:

Mid-Continent Oil & Gas Assoc.
Western Petroleum Refiners Assoc.
Association of Natural Gasoline Manufacturers.
National Association of Independent Oil Producers.
National Petroleum Marketers Assoc.
National Petroleum Assoc.
American Oil Men's Assoc.
Chamber of Mines and Oil.

Retiring Institute president, T. A. O'Donnell in a Texas two-gallon hat

"(3) That the term of office of each member of said Committe shall be for one year and that vacancies shall be filled in the same manner as original appointments are made: Provided, that for the purpose of getting the work under way as speedily as possible the present membership of this committee shall constitute the members of the Public Relations Committee and shall hold office until the various constituent organizations shall have designated permanent representatives to serve during the year 1925.

"(4) That said Committee shall function under the general auspices of the American Petroleum Institute.

"(5) That said Committee is empowered to assemble the facts of the petroleum industry from all reliable sources and to distribute such facts to the industry and to the public in such manner as to it seems wise and proper to attain the objective of informing the industry and the public of the facts of the oil business.

"(6) That such Committee shall elect, annually, its own chairman, secretary and treasurer and such other and further officers, sub-committees and staff as it may require.

"(7) That such Committee be and it is hereby authorized to raise by private subscriptions a special fund for its use and maintenance of $100,000 per annum. Subscribers may be asked to subscribe a specified sum divided into three an-

nual payments. Every effort should be made by the Committee to secure subscriptions from the largest possible number of units engaged in the various branches of the petroleum industry.

"(8) That the Committee is authorized to disburse funds which shall have been collected and in its treasury not exceeding the sum of $100,000 per annum. Such expenditures as the Committee may make shall be for salaries of Committee employees, general office overhead and cost of collection, analysis, preparation, printing and distribution of facts and figures about the oil business.

"(9) Each unit in the industry is urged to co-operate with the Committee in the raising of the necessary funds and in the conduct of the work by participating in the distribution and dissemination of the material which the Commttee may prepare or suggest.

"(10) That the staff of the American Petroleum Institute shall render every possible co-operative service and assistance to the Commitee. It is suggested that the Board of Directors of all other oil trade organizations instruct their executive officers to do likewise.

"(11) That authority is hereby given to executive officers of the Institute to enlarge the facilities of the statistical division of the Institute to the extent found necessary to enable it to supply the Public Relations Committee with the data necessary in its work,

Table Of Contents

Debate on Doherty Plan Is Called Off 17
J. Edgar Pew Elected Institute President 20
Change in Rate Structure Forecast 24
New Developments in Continental Trading Co. Deal 25
Re-elect W. N. Davis to Head Mid-Continent Producers 27
Complete Report Institute Proceedings 29-49
Failures Narrow South Vernon Productive Area 75
Article 6 in Paul Wagner's Future Production Series 83
Appraisal of Oil & Gas Properties, By Roswell H. Johnson and Paul Ruedemann 89

Departments

Weeks Oil Markets Summarized 23
Production News and Completions 51-64
In the Mailbag 68
The Editors' Viewpoint 69
New Station Construction 71
On the Lazy Bench 109
Refinery and Tank Wagon Markets 113-123
Complete Export Markets ..120-122
Financial 124-126

R. A. Wotokich, H. L. Doherty & Co., New York; L. G. Coleman, general manager Cities Service Oil Co. of Texas, one of the Doherty interests; Frank R. Contes, director of Cities Service Co., New York; H. E. Branch, Chicago, general manager, Carson Petroleum Co., and Milan R. Bump, chief engineer, H. L. Doherty & Co. interests

Want $3.25 A Barrel For Penn. Crude

OIL CITY, PA., Dec. 13.—Pennsylvania producers want at least $3.25 a barrel at the well for their crude. They believe the oil is worth more but producers of Venango county, which embraces the territory about Oil City and Franklin, who met Dec. 10 at Franklin, adopted a resolution pledging them to sell "all runs as run providing the oil is advanced to $3.25 a barrel, and everybody disposes of his storage holdings and sells them to Mr. Seep (Joseph Seep Purchasing Agency) or the Independent refiners and accept no outside premiums anywhere for a period of 90 days."

The producers' meeting was called following the imposition of an embargo on Pennsylvania crude oil except when shipping orders accompanied tenders. This was done by the National Transit Co. on Dec. 1. Following the sale of 50,000 barrels of Pennsylvania crude held in the company's storage tanks, the company lifted the embargo Dec. 8.

David B. McCalmont, who was chairman of the meeting, was authorized to appoint an executive commitee which is to appoint two sub-committees, one to call on the Independent refiners to discuss the crude oil situation and the other to act on taxation matters.

Mr. McCalmont said the refiners should be guaranteed a steady supply of crude oil so they could build up their markets. At present, he pointed out, inability to gauge their output because they did not know from time to time how much crude they could get, has held them up and is subverting the purposes of the Pennsylvania Grade Crude Oil Association.

Others who spoke were George H. Torrey, Oil City; J. C. Kilgore, Franklin; W. D. Doyle, Franklin; W. J. Duffee, Franklin; B. F. Brundred, Oil City; H. J. Crawford, Emlenton; Lee A. McCracken, Oil City, and Walter W. Miller, Franklin.

Late Tank Wagon Change

TULSA, Dec. 16.—Magnolia Petroleum Co. on Dec. 9 advanced gasoline 2 cents at El Paso to 14 cents tank wagon and 16 cents service station. On Dec. 11 it reduced service station price only at Muskogee 2 cents to 17 cents.

THE great part of the account of proceedings and publishing of important papers at the Fort Worth institute convention is to be found on Pages 29-49 of this issue, together with photographs of many other prominent oil men visiting there.

Through lack of space the publishing of certain of the more important technical papers and the address of Charles E. Mitchell, of the National City Bank of New York, has been delayed until the issue of Dec. 24. Among these are the papers of O. P. Keeney, Tide Water Oil Co., New York, on furnace oil; Edward P. Bailey, head of the burner manufacturers association, on problems of burner makers; Frank H. Hill, Union Oil Co. of California, on cementing deep wells; and John Zublin, General Petroleum Corp., on pumping deep wells in California. —Editor.

THIS WEEK'S MARKETS SUMMARIZED

Crude Production By Districts

Oklahoma

	Dec. 13	Dec. 6
Bristow	42,550	42,875
Burbank	70,840	71,080
Cushing	23,000	23,010
Cromwell	46,380	47,104
Healdton	16,000	16,000
Hewitt	17,000	17,100
Osage, except Burbank	40,000	39,800
Papoose	31,160	30,070
Stroud	3,460	3,515
Tonkawa	105,505	107,945
Wewoka	12,345	12,990
Other fields	117,300	116,200
Total	525,540	527,689
Decrease		2,149

Kansas

	Dec. 13	Dec. 6
Augusta-Douglass	3,470	3,500
Blankenship District	2,485	2,500
Elbing-Peabody	6,930	6,950
El Dorado	15,880	15,900
Fox-Bush	3,100	3,050
Greenwood County	26,450	27,000
Other fields	30,000	29,850
Total	88,315	88,750
Decrease		435

Texas and Coastal Louisiana

	Dec. 13	Dec. 6
Mexia, Currie, Richland	49,400	50,000
Wortham	16,500	6,300
Corsicana, Powell	67,100	67,700
Wichita Falls Dist	88,150	87,200
Ranger, lime	27,400	27,960
Ranger, sand*	9,645	9,750
West Texas: Reagan, Scurry and Mitchell Counties	9,000	8,570
Panhandle	1,250	1,400
San Antonio, Luling, Mirándo	50,600	48,500
Coastal Texas	69,990	72,180
Coastal Louisiana	8,730	8,560
	397,765	388,120
Increase		9,645

*Includes Young, Palo Pinto, Shackleford, Brown, Coleman and Callahan counties.

Eastern	108,000	107,500
Total U. S.	1,964,064	1,968,393
Decrease	4,329	

Marketing

(Marketing News Page 113-126)

Oklahoma-Kansas.—Gasoline cheaper with brokers pushing sales of gasoline bought several weeks ago when prices were advancing. Export buying slackens. Gasoline stocks lowered, however. Natural gasoline easier. Kerosene slow. Cylinder stocks and wax more active and prices slightly higher. Gas oil firm. Fuel oil unchanged.

North Texas.—Gasoline buying slackens. Distillates strong. Kerosene slower. Gas oil quiet. Fuel strong.

Chicago.—Gasoline softer. Kerosene slow. Distillates easy. Gas and fuel oils strong.

Pennsylvania.—Gasoline price slightly easier. Cylinder stocks and neutrals scarce and strong. Fuel active and strong. Kerosene steady. Wax firming.

Gulf Coastal.—Lubes firm.

California.—Generally unchanged.

New York Export.—Buying light because of approaching holidays. Good movement of gasoline and kerosene against old contracts and on consignment. Spot gasoline and kerosene cheaper. Bunker oil stronger with $2 oil within' month predicted. Gas oil firmer. Lubes also firmer. Demand for paraffin oils increases. Wax also improved, prices steady.

New Orleans Export.—Gasoline unsettled. Kerosene slightly improved. Bunker oil strong with price advancing. Gas oil steady. Zero oils more active, prices firm. Waxes quiet.

Crude Production By Districts

North Louisiana—Arkansas

Daily average	Dec. 11	Dec. 4
Caddo, light	9,623	9,762
Caddo, heavy	2,202	2,294
De Soto Red River	5,212	5,212
Cotton Valley	7,103	9,726
Haynesville	15,812	16,202
Homer	6,920	6,293
Bellevue	3,415	3,370
ElDorado	10,841	10,812
Smackover, light	29,920	30,104
Smackover, heavy	68,430	74,201
Stephens	1,976	1,976
Nevada County	1,390	1,365
Total	162,844	174,949
Decrease	12,105	

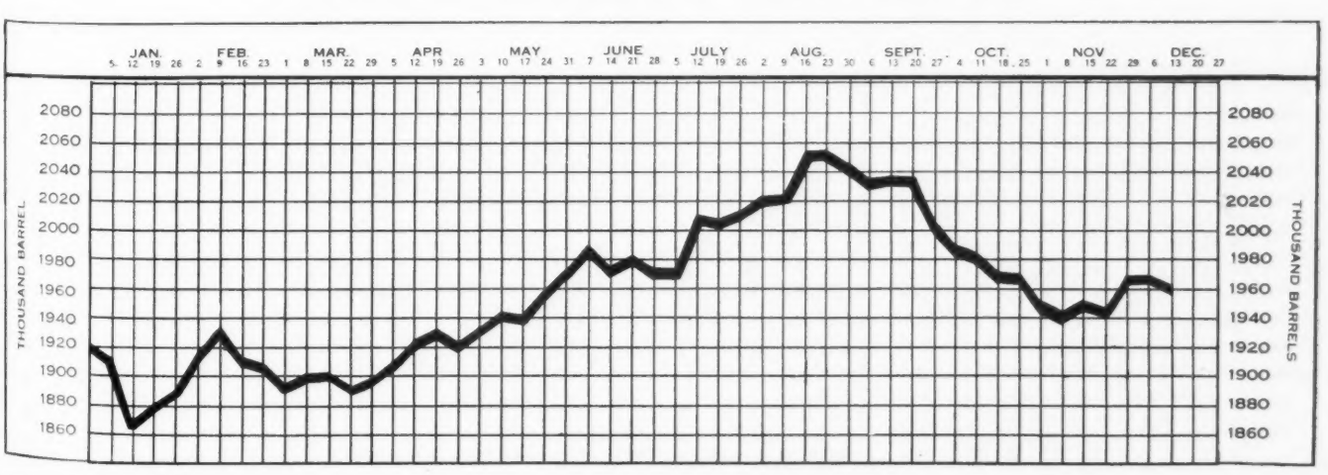
Rocky Mountain Fields

Fields	Dec. 13	Dec. 6
Salt Creek	57,900	58,000
Teapot	2,180	1,680
Big Muddy	3,140	3,715
Grass Creek	3,315	3,230
Elk Basin	890	850
Greybull, etc	85	105
Rock River	3,100	3,020
Lance Creek	975	1,025
Poison Spider	380	440
Osage	340	365
Hamilton Dome	775	600
Notches	40	185
Lander	350	375
Pilot Butte	80	85
Lost Soldier	5,425	5,050
Ferris	50	65
Craig	1,100	1,135
Fort Collins	725	.....
Cat Creek	3,210	3,150
Florence	245	.....
Kevin-Sunburst	3,495	3,035
Miscellaneous	600	775
Totals	88,400	86,885
Increase		2,485

California

	Dec. 13	Dec. 6
Long Beach	127,000	128,000
Santa Fe Springs	51,000	52,000
Torrance	45,000	45,500
Huntington Beach	40,000	41,000
Dominguez	40,000	38,000
Rest of State	290,200	290,000
Total	593,200	594,500
Decrease		1,300

Watch The Trend Of The Week's Production



May Introduce Spread Between Crude And Refined Rates East Of River

By A. E. Heiss

STAFF REPRESENTATIVE

WASHINGTON, Dec. 15. A REVOLUTIONARY change in freight rates on petroleum and its products, in territory east of the Mississippi and north of the Ohio is foreshadowed in a report made public by the Interstate Commerce Commission Dec. 3. Unless that body backs down from a position taken by it the spread between rates on crude and on refined that characterzes rates west of the Mississippi river will likely be imported into the rate structure east of that stream.

In the territory west rates on crude are generally six or six and a half cents per 100 pounds lower than on refined products. The threat to bring that spread into eastern territory was not made while the Commission was nodding. It was made notwithstanding the objection of Commissioners Hall, Cox and McManamy, three of its eleven members.

The explosive report which contains the threat of one rate on crude and another on refined products was made on further hearing. In the original report the Commission said a rate of 29 cents on crude from Irvine and Beattyville, Ky., to Blue Island, Chicago, was not unreasonable or unduly prejudicial, although 4.5 cents higher than the longer haul from the Mid-Continent field.

In the report on further hearing the rate body reverses itself and holds the rate unreasonable to the extent it exceeds the rate from the Mid-Continent or 29.5 cents. The rates from the two fields now are 35 cents from Kentucky and 29.5 cents from Mid-Continent. The government, represented by the director-general of railroads, and the individual carriers are directed to make refund on all shipments made between August 2, 1917 and some time in 1919, when the Barnett company ceased shipping crude from Kentucky. The rate from the twelve shipping points in eastern Kentucky varied from 20 cents per 100 pounds in 1917 to 35 cents, the rate that has been in effect since July 1, 1922, the fluctuations being due to general advances and reductions in all rates since June 25, 1918.

No order was issued requiring the railroads to reduce the 35-cent rate to 29.5 cents in connection with the report. The rate body merely said that rate would be unreasonable for the future to the extent it exceeded 29.5 cents.

The nub in this case came near the end of the report written by Commissioner Eastman, who said, "A further important fact to which complainant now directs our attention, and which was not considered in the previous report, is the fact that the rate on crude oil from the Mid-Continent field to Chicago is 83 per cent of the rate on refined oil, whereas the factor charged north of the Ohio River on eastern Kentucky oil is the same on both crude and refined. We have consistently held that reasonable rates on crude oil should be relatively lower than reasonable rates on refined oil, and there is here no showing that the rate on refined oil north of the Ohio River to Chicago is less than reasonable."

For the benefit of the non-technical man it may be said that the 35-cent rate is made up of two parts or factors, 12.5 cents for the haul to the Ohio river from point of origin and the balance for the haul north of the Ohio, referred to by Mr. Eastman as the "factor charged north of the Ohio."

Henry C. Hall, chairman of the rate body, equal, if not superior, as a lawyer, to his colleagues, is the man upon whose judgment is placed the warrant for the use of the word "explosive" in describing the nature of the report. On the point about the spread in rates between those on crude and those on refined, he said:

"The majority lay hold of the spread between crude and refined petroleum which now characterizes rates from the mid-continent field and import it into eastern territory as a ground for condemning the rates now before us. If this be sound it must follow, not only that the rates from the 10 other producing points in eastern Kentucky are unreasonable, but that the entire rate structure north of the Ohio River is vulnerable under like attack. There also rate parity between crude and refined oils is prevalent. So elsewhere, as, for example, from New Orleans and Baton Rouge to East St. Louis. Such parity we have often recognized and have not condemned. But if, perchance, the time has come for condemnation—and nothing on this record shows that it has—is it not still true, as we said in Standard Oil Co. v. Director General, 60 I. C. C. 105 at 108-9:

" 'Even assuming that there should be a different rate on crude than on refined oils, there is here no warrant for holding that the difference should be expressed by a reduction in the rate on the crude oils.'

"This expression we quoted with approval as recently as last year in Lubrite Refining Co. v. D. G. Ry. Co., 80 I. C. C., 515 at 517, and dismissed the complaint. The relationship of rates on crude and refined oils is not before us. If it were, the existence of such a parity has no probative force with respect to rates on crude oil in the absence of an affirmative showing that the rates on refined oil are maximum reasonable rates and higher than the maximum of reasonableness for crude oil. The record is bare of any such showing and the original finding should be affirmed."

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Mysterious "Mr. X" Is Mentioned In Continental Trading Deal

By A. E. Heiss

STAFF REPRESENTATIVE

WASHINGTON, Dec. 16

ALLEGATIONS and intimations made and given by government officials in the last three days, if only half accurate, indicate that the Teapot Dome matter will turn out to be the largest scandal ever known in the oil industry.

At this time the government is preparing to follow H. M. Blackmer, chairman of the board of the Midwest, and James E. O'Neil, former president of the Prairie Oil & Gas Co. into the courts of France to compel them to tell what they know about the transactions of the now defunct Continental Trading Co., Ltd. This was the Canadian corporation which government counsel say bought crude from the A. E. Humphreys companies and immediately resold it to the Prairie and Sinclair companies, at an advance of 25 cents per barrel.

That profit, it is alleged, was invested in United States Liberty Bonds, $90,000 of which the government alleges were in the hands of Albert B. Fall, former secretary of the interior, soon after their distribution as a dividend by the trading company. The government may go to Africa in pursuit of Henry S. Osler, the Canadian head of the Continental Trading Co. The last heard of him, it was said today, was that he was en route to Africa and that he might not return for several months. The last time the government attorneys handling the Teapot Dome litigation had accurate information as to the whereabouts of O'Neil and Blackmer they were dividing their time between Paris and Cannes, France. That is the reason for saying the Teapot Dome case may have an end in France before the case is resumed at Cheyenne, Wyo.

This development of the case, the possibility of the government having to appeal to French and African courts to get the testimony of Osler, Blackmer and O'Neil, followed closely on the heels of a decision by Justice Riddell of the Supreme Court of Canada, granting the motion of former senator Atlee Pomerene and Owen J. Roberts, special government in the Teapot Dome case, for an order requiring Mr. Osler to give testimony concerning the operations of the Continental Trading Co., Ltd., and the finding of $90,000 of Liberty bonds handled by it, in the hands of former secretary Fall. He held that Osler was not entitled to claim the privilege of a solicitor and refuse to answer questions as to the operations of that company on the ground that the communications between the company and him were privileged communications between an attorney and his client.

Justice Riddell said that, summarized, the position of Mr. Osler was that there were transactions between the Continental and an undisclosed person, known as Mr. X, which, by reason of Mr. Osler being an attorney, fell within the domain of privileged communications. The justice said that the claim of privilege had been made for a century and a half under conditions and circumstances such as were disclosed in the affidavit of cousel for the United States.

He said the name of Mr. X was known to Mr. Osler before he entered into the transactions and was not communicated to him by his client and that therefore, there could be no question of privilege in that transaction. He held that Mr. Osler must answer the interrogatories of counsel for the United States in the consular court at Toronto. Mr. Osler, as before said, is now said to be en route to Africa.

On account of the decision of Justice Riddell, Messrs. Pomerene and Roberts, when they appear in the Federal Court at Chevenne on Dec. 20, in the suit for cancelation of Teapot contract will probably ask for a continuance of the trial until next March. It is scheduled to be resumed on Jan. 6. Attorneys for Sinclair are expected to oppose continuance. It will be necessary for the attorneys of the government to disclose to the court at Cheyenne what has been decided at Toronto, together with such facts as they may have to show the impossibility of getting the testimony of witnesses, now in France and en route to Africa before Jan. 6.

It is believed the attorneys for the United States government will soon file another affidavit showing the United States and the Canadian courts further reasons for orders compelling testimony concerning the operations of the now defunct trading company. The further affidavit, it is intimated, will be no less interesting to the oil industry and the public than the first affidavit, the one in which they alleged they had traced $90,000 of the Libertly Bonds bought with profits from the resale of crude bought from A. E. Humphreys companies to the Prairie and Sinclair companies, to the hands of Albert C. Fall.

In all a profit of about $2,000,000 was made out of the resale of 8 million barrels of crude, on a contract calling for the delivery of 33½ million barrels it is said by government counsel. After the 8 million barrels had been handled the Continental Trading Co. sold its contract to the Prairie and the Sinclair companies which had been guarantors of the contract. Then the affairs of the trading company, according to the affidavit filed by attorneys for the government, in their move to compel the testimony of Canadian witnesses, were wound up and the books of the company destroyed.

It is intimated that the government has traced more of the bonds bought with the profit made by the trading company and that the next move will be to force a disclosure of the facts about the disposition of those bonds.

Osler is expected to take an appeal from the decision of Justice Riddell to the Privy Council. Such appeals, however, it is said, do not take long as appeals in the United States.

Howard Attacks Conduct Of Indian Office

WASHINGTON, Dec. 15.—In substance Charles H. Burke, commissioner of Indian affairs, has been accused, in a bundle of letters and court records read into the Congressional Record by Representative Howard of Oklahoma, of misfeasance in office in that, as commissioner, he had approved settlements of suits in which titles to Indian oil lands were in question, for much less than they were worth.

Mr. Howard put into the record a mass of material about cases in Oklahoma courts and before the Indian office, prepared by H. L. Murphy, of Okmulgee, a former county judge. A reading of the material shows that the cases were pending for a long time and were fought up and down by guardians and pretended guardians so that the whole matter was more involved than that in Dickens' Jarndyce vs. Jarndyce.

The material was submitted presumably for the benefit of the sub-committee of the Indian affairs committee that is investigating such affairs but it was put into the Congressional Record in the form of a speech. The Indians who were involved were Saber Jackson, Martha Jackson and Jackson Barnett.

Murphy's statement said that Burke had permitted the settlement of a case of Saber Jackson for $50,000, though this was $250,000 less than had been offered in another settlement, which the commissioners had refused to approve. Furthermore Murphy charged, "the $50,000 was $700,000 less than the commissioner by his own admission, was convinced Saber Jackson was entitled to."

Settlement of the other cases were similarly criticized. Murphy also asserted the commissioner had approved the statement of $70,000 fees to the attorneys who had appeared against Martha Jackson, and that Burke's "administrative acts had resulted in a scheme whereby it is proposed that approximately $250,000 of her estate," now in the possession of the Interior department, should be turned over to the probate courts of Okmulgee County, "the attorneys procuring the transfer", receiving 10 per cent.

Interesting Talks Made At Meeting Of Tulsa Geologists

By H. B. Goodrich,
Petroleum Engineer

TULSA, Dec. 10. MEETINGS of the Tulsa Geological society, which takes place every two weeks, have been enjoying an increasing popularity. Papers presented are recognized not only to be of interest to professional geologists engaged in Mid-Continent oil fields but of value to all oil operators as well. The meetings have been more and more attended so that the seating and standing capacity of the rooms has been taxed. Therefore the meeting of Dec. 6 was held at a more commodious room in the Municipal Building, Tulsa. More than 100 guests and members were present.

Frank C. Greene, president of the society, announced a change in the program as shown in the notice. W. H. Foster, who had been slated for a paper on southeastern Kansas, had been called out of town and others had been called on practically at the last moment to fill the time allotted to him. It was a disappointment not to hear Mr. Foster's paper at this time but it is believed that it is only postponed and will be presented at the next meeting on Dec. 20.

H. B. Goodrich was the first speaker his subject being, "Value of Well Logs." His main thought was that since present refined methods of sub-surface geological mapping require accurate logs and since logs of most wells are recognized as containing inaccuracies, there might be improvement in well log keeping. This might be accomplished by greater co-operation between geologists and drillers. Reference was made to an article published in the last Bulletin of the American Association of Petroleum Geologists, by Edgar Kraus, in which it was held that in rotary drilling, good accurate logs showing small changes in formations are possible. In this, means of recognizing formations while being drilled are given. Mr. Goodrich held that also in cable drilling, although possibly to less extent than rotary, the personal factor influences interpretation of samples taken and that study of working details would make for more accurate, permanent records that would render the engineer's work more certain.

In a short discussion Mr. True commented on the present recognition of the Short Creek colite, a geologic marker in the Boone formation of the zinc and lead district, which general recognition was brought about by co-operation of geologists and test hole drillers.

Sidney Powers of the Amerada Petroleum Corp. presented a paper on the test drilled by his company in Nebraska.

Mr. Powers said in part:

"The Nehawka Oil Co., under the direction of the Amerada Petroleum Corp., drilled a well with a diamond drill on the Shrader farm, in the C NE¼ SE¼ of 26-11N-12E, Cass county, Nebraska, on a large, flat, surface anticline mapped by Glenn M. Ruby and the Nebraska Geological Survey. The well was started March 1, 1924, and abandoned Sept. 15 at 1828 feet, having been drilled in quartzite carrying granite pebbles from 1598 feet to the bottom of the hole.

Technical societies which meet in Tulsa have enjoyed unusual growth and attendance because they provide the facilities for open discussion of many problems common to oil operators. One of the most active in the promotion of the success of societies such as the one whose meeting is described in the accompanying article is H. B. Goodrich. National Petroleum News has arranged with Mr. Goodrich for reports on future meetings of the Tulsa Geological Society, the Mid-Continent section of the American Institute of Mining Engineers and other societies whose sessions are open to the public—Editor.

"The well started in the Pennsylvanian Iatan limestone, and drilled through the Pennsylvanian at 464 feet, into dolomite, which is probably of Ordovician age. Few breaks were found in this formation, the most important being the St. Peter sandstone from 1538 to 1558 feet. This was dry. No oil, gas nor water was found below the surface soil. A new well is being promoted about two miles away by the White River Development Co., which gave the Nehawka acreage for the well.

"The interesting feature of the Shrader test is the shallow Sioux quartzite, evidently a northern extension of the Kansas granite ridge of 60 miles. Wells 15 miles east and west of the Shrader found 2500 feet of sedimentary rocks above the quartzite."

Mr. Powers' geologic conclusion was that, while some of the cores, which he showed, were very porous and therefore suitable for accumulations of oil and gas, the reason for there being no oil accumulation was in the absence of source rocks. The impression was that he extended that discouraging condition to influence the greater part of eastern Nebraska and Iowa.

The author did not go deeply into the technicality of the diamond drilling outfit. It seems, however, that the work was contracted for at a price that seems greatly in excess of oil field work here. Further references were made to inadequate boiler power furnished and it appeared that not only were there those disadvantages, but that in some of the lime formations pebbly chert fragments falling in around the bit delayed the work. The clearance of the diamonds in the bit was so small that drilling was delayed on this account. Altogether the impression was that possibly under better conditions the diamond drilling might have shown better efficiency but in this case the work was done under some handicap.

On the other hand geological information as given is very good if indeed a little disheartening to those who may have had the "hunch" of oil on the structure.

A little good natured humor was introduced when Mr. Powers referred to E. G. Woodruff and other well known geologists as natives of the vicinity of this dry hole. Upon being called upon in the discussion, Mr. Woodruff answered that the reason the Amerada had found no oil there was that he had decided it that way when he was a resident, but that seriously he agreed with Mr. Powers that lack of oil was due to the absence of "source rock formations." Incidentally, he quoted the standing offer of $2,500, which has not yet been claimed, to any one who would find coal in Nebraska. M. M. Valerius, commenting on this, also quoted an offer of $10,000 for oil which the Amerada had failed to find. Mr. Valerius however, did not believe in any broad condemnation of all the state of Nebraska on the basis of this test but thought that gas showings, oil seepages, and structures in western Nebraska ought to lead to detailed geologic mapping and possibly oil results. This in view of his own experience in western Kansas, whose conditions of oil deposition might extend northward into Nebraska.

Another Test Planned

In closing discussion Mr. Powers stated that another well was to be started by some other operator about two mlies from the Amerada test. The reason for this further attempt was that a few core samples had shown indications of hydrocarbons after a chloroform test.

T. C. Sherwood was the last speaker. Mr. Sherwood showed a cross-section from Phillipsville, Sec. 22-14-12 south to Youngstown; to Josey-Wilcox in 28-12-11 southwest to Okemah, to the Midwest pool; west to the Cromwell pool; south to the Roxana well in 12-8-8; southwest through Wewoka to a deep well in 29-6-6; south to Ada into the Arbuckle Mountain region. The section was based on twenty-five drilled holes and showed the attitude of three sands: the Booch, the Dutcher-Deaner, co-related with the Gilcrease and Papoose and

Cromwell, co-related with the Lyons. The main point brought out was a continuation of the Cromwell sands as far as Wewoka, while southwest of Wewoka the Cromwell sands are not found, although the Gilcrease sand does exist in Wewoka being the producing horizon of that pool.

Another point was that the Mississippi lime is apparently not present southwest of 12-11 and that the Hunton, instead of the Mississippi lime, occurs above the Simpson Wilcox at Wewoka. That is, the Mississippi lime, according to the section cuts out to the south and the Hunton cuts out to the north. Just where the changes take place is not definitely known. An interesting deduction is made that certain areas are not favorable for production in the Cromwell and Gilcrease horizon southwest of Wewoka while other regions are favorable. From the information at hand at present, having found the Wilcox on the south end and north end of the cross-section with no wells in the central portions that have extended to the Wilcox sand, it looks as if the Wilcox sand would be present throughout the area between Ada and Okmulgee and productive on favorable structures.

All present were much interested in the displayed cross-section and there was discussion by Messrs. Kroenlein, Greene, and Powers. One interesting point brought out was a fault at Cromwell found in three sands but not through the whole column above. This fault is supposed to be pre-Cherokee in age.

The next meeting of the society will be held on Dec. 20. The program, to be announced later, will include W. H. Foster on southeastern Kansas and Dr C. N. Gould on Unsolved Geological Problems of Oklahoma.

Magnolia Running Gas Through New Line

By Special Correspondent

SHREVEPORT, Dec. 11.—Gas is being run to the Magnolia Gas Co.'s refinery at Beaumont, Texas, from the Bethany and Cotton Valley gas fields of northwest Lousiana, through a new 16-inch line begun last summer, it is learned from the company's office here. The gas is expected to be turned into the line full blast as soon as the line is tested with the present run, it is understood.

This line is 215 miles long and its calculated cost was several million dollars. Besides the main line, which goes from a central distributing plant on the outskirts of Shreveport, there are also elaborate gathering systems in the Bethany and Cotton Valley fields.

A 30-mile gas line between Mooringsport, La., and the Spring Hill gas field in north Webster parish, built by the Reserve Natural Gas Co. is expected to be joined with the company's main line within a few days. This is a 12-inch line.

William N. Davis

Davis Again Re-elected Head Of Mid-Continent Association

FORT WORTH, Dec. 11.—At a meeting here today of the general executive committee of the Mid-Continent Oil & Gas Association, officers were elected for the ensuing year, a committee was appointed to arrange the association's budget, the association was placed on record as approving the Institutes action as to educational publicity, and approval was given to plans for expanding the association's safety activities during the coming year.

William N. Davis, of Foster & Davis Inc., Bartlesville, was re-elected president of the association, entering upon his fifth term in that office. Burt H. Collins, Echo Oil Co., Tulsa, was re-elected vice-president representing the Kansas-Oklahoma division. Walter B. Pyron, of the Gulf Production Co. was re-elected vice-president for the Texas division. Clyde M. Benett, of Shreveport, president of the Louisiana-Arkansas division, was elected vice-president to represent that division. Harry H. Smith of Tulsa was re-elected secretary and treasurer.

The committee appointed to arrange a budget and to have charge of financing the association consists of James A. Veasey, Carter Oil Co., Tulsa, W. H. Francis, Magnolia Petroleum Co., Dallas; George O. Baird, Shreveport; and E. B. Reeser, Barnsdall Oil Co., Tulsa.

The executive committee went on record as approving the action taken by the Institute as to educational work, and pledged its full co-operation toward prosecution of the work. Harry H. Smith, secretary, was named as committeeman to represent the association on the Institute committee. William N. Davis, president of the association, also is on the Institute committee.

Henry W. Boggess, of the Sinclair Consolidated Oil Corp., Tulsa, appeared before the executive committee and made a report on the work of the Petroleum Safety Council. He presented a tentative plan for re-organization of the council, providing for the employment of a safety engineer, increasing amount to be paid per employe by subscribing companies, and giving a budget covering probable expenses for the coming year. This report and the proposed re-organization was approved by the committee, contingent upon the ability of the council directors to obtain co-operation of companies interested in the safety movement. It was the concensus of opinion among the committeemen present that much good had been accomplished in safety work in the past year, and no doubt was expressed that the re-organization would be successful in every way.

Increase In Crude Runs Causes Gain In Gasoline Stocks

By J. C. Chatfield

STAFF REPRESENTATIVE

TULSA, Dec. 15

MID-CONTINENT refiners increased their charges to stills 8.8 per cent during the week ended Dec. 12, according to reports from 117 plants with a rated capacity of 435,000 barrels daily, to National Petroleum News. With the exception of north Louisiana and Arkansas each group of plants reported increases.

Twenty-one Kansas plants increased runs 3.8 per cent to 59,382 barrels per day or 61 per cent of their rated capacity of 95,700 barrels. Oklahoma plants increased their runs 12.5 per cent to 107,167 barrels per day or 70 per cent of their rated capacity of 154,400 barrels. In north and central Texas one plant of 2500 barrels capacity which had been closed resumed operations and the entire group increased runs 17.5 per cent to 61 per cent of capacity.

In northern Louisiana and Arkansas refiners reduced their runs 6.8 per cent to 39,644 barrels per day but were still running at 78 per cent of their capacity of 50,900 barrels. The entire group of reporting plants increased to 285,785 barrels per day or 65 per cent of capacity.

Demand for all products offered in the Mid-Continent continued strong and refiners were able to reduce their stocks of kerosene and gas and fuel oil. Kerosene shipments were 7,106,259 gallons and production 6,503,752 gallons reducing stocks 2.5 per cent to 205,287 gallons. Fuel oil shipments totaled 37,802,505 gallons and production 36,992,264 gallons reducing stocks nearly a million gallons to 127,770,668 gallons at all plants.

The increase in production accounted for all of the increase of 1,300,000 gallons in gasoline stocks during the week. Shipments decreased only 1.8 per cent to 25,382,295 gallons while production was increasing 6.7 per cent to 26,682,106 gallons. On Dec. 12 total stocks of 51,867,946 gallons of gasoline represented 14 days' supply at the rate of shipments during the week.

Kansas refiners produced 6,306,556 gallons of gasoline during the week and shipped 5,665,207 gallons bringing stocks to 7,017,378 gallons. In Oklahoma production was 10,327,985 gallons and shipments 9,767,538 gallons increasing stocks roughly 600,000 gallons to 29,215,656 gallons. Texas refiners lacked only 120,000 gallons of shipping their gasoline production of 7,785,083 gallons. Stocks in that field on Dec. 12 were 11,387,336 gallons. Arkansas-north Louisiana plants reduced stocks 20,000 gallons to 4,247,567 gallons.

Both Kansas and Texas refiners showed substantial reductions in their stocks of kerosene. Kansas refiners shipped 800,000 gallons more than they produced, bringing their stocks down to 5,531,244 gallons.

Oklahoma refiners increased stocks 300,000 gallons producing 2,502,620 gallons and shipping 2,206,781 gallons, bringing total stocks to 8,666,350 gallons. Texas plants reduced stocks 170,000 gallons to 5,680,421 gallons and Louisiana-Arkansas plants increased their stocks 45,000 gallons to 650,736 gallons.

With the exception of north and central Texas all groups of refiners reduced gas and fuel oil stocks. In Kansas shipments were 1.1 per cent greater than production reducing stocks to 12,521,789 gallons. In Oklahoma shipments exceeded production by 8.1 per cent and stocks were reduced to 62,558,841 gallons while in Texas stocks increased 1,100,000 gallons to 35,199,262 gallons. Louisiana-Arkansas plants cut their reserves of gas and fuel oil a million gallons to 17,490,776 gallons, shipments being 12.6 per cent greater than production.

A. A. Perkins, owner of Perkins process for cementing wells, California; M. O. Danciger, Wichita, Kan., and Erle P. Halliburton, cementing expert and oil operator in Oklahoma

Eastern And Western Refiners May Join

TULSA, Dec. 13.—Consolidation of the National Petroleum Association with the Western Petroleum Refiners Association into one large national association for refiners, is a possibility.

The following committee of three members of each association has been suggested to discuss the proposal further to see whether it is feasible and desirable: O. P. Keeney, Tide Water Oil Co.; Fayette B. Dow, Washington counsel of the National Petroleum Association, and Samuel Messer, James B. Berry's Sons Co., for the N. P. A.; and F. A. Pielsticker, vice president, Skelly Oil Co.; Howard Bennette, managing director, Western Petroleum Refineries Association, and P. M. Miskell, vice-president, Empire Refineries, Inc., for the W. P. R. A.

Four State Meetings

CHICAGO, Dec. 16.—Four state jobbers' meetings this week show marked interest in local organizations. Nebraska jobbers meet at the Rome Hotel in Omaha, Dec. 16 for their annual session. Wisconsin jobbers hold their regular monthly meeting at the Rentlaw Hotel Fond du Lac, Dec. 17. Illinois jobbers hold their annual meeting at the Congress Hotel, Chicago, Dec. 18, and North Dakota jobbers assemble to form a state association at Gardner Hotel, Fargo, Dec. 19.

North Dakota Jobbers to Meet

FARGO, N. D., Dec. 15.—Independent oil jobbers of North Dakota will meet in the Gardiner hotel here Friday Dec. 19 to effect an organization. H. M. Wilson of the Independent Oil Co., Minot, is fostering the meeting and hopes to have 25 jobbers attend.

Standardization Of Accounting For Industry Is New Proposal

By J. C. Chatfield

STAFF REPRESENTATIVE

FORT WORTH, Dec. 10

STANDARDIZATION cropped out in a new place at the fifth annual meeting of the American Petroleum Institute here when auditors and comptrollers of a large number of companies held a series of group sessions. It was the first meeting of that class of company employees in connection with an Institute meeting.

To carry on the proposed work of arriving at uniformity in the industry the auditors and comptrollers voted to establish a new general committee of the Institute. The proposal is to be submitted to the board of directors for approval before permanent organization is effected.

M. W. Madison, head of the division of taxation and accounting, presided at the group sessions. At the opening meeting Mr. Madison suggested that uniformity of methods would be of value in the industry in enabling the public as well as those in the industry themselves to readily analyze published balance sheets and income and operating statements.

The suggestion was seized upon with enthusiasm by the group of accountants. W. H. Owens of Henry L. Doherty & Co., New York, told of some of the work which has been done along the same line by the National Electric Light Association. Last year Mr. Owens was chairman of the accounting section of that organization.

H. A. Gidney of the Gulf Oil Corp., Pittsburgh, reviewed the work which has been done in past years by the American Railway Association, The American Gas Association and other organizations. In common with others he pointed out standardization in these other industries has been accomplished only through arduous work extending over a long period of years.

One of the big advantages pointed out was that the oil companies will be enabled to simplify their tax problems by uniformity. With standard methods the industry could go to the government en masse and present its case convincingly. Tax tangles would also be simplified if government tax bureau men had to do with identical reports from all companies.

At the close of the first meeting Mr. Madison appointed the following committee to suggest a plan for organization: Paul R. Jones of Henry L. Doherty & Co., Rodney Durkee of the General Petroleum Corp., H. A. Gidney of the Gulf Oil Corp., John H. Tuttle of the Standard Oil Co. of California, and C. H. Jay of the Pure Oil Co.

The committee recommended that a general accounting committee of the Institute be formed on a regional basis. It was suggested that members of regional groups meet at stated times to discuss individual problems and that the finished product of the groups go before the general committee for discussion and revision. It was suggested that 18 men be included in the committee as follows: California 3, Rocky Mountain 1, Oklahoma and Kansas 3, Texas, Louisiana and Arkansas 3, Appalachian 4, and Atlantic seaboard 4.

If the proposal of the accountants is accepted by the Institute directors members of the committee will be named through Secretary R. L. Welch and an initial meeting be called shortly after the first of the year.

Tax Problems Discussed

Tax problems were made the basis of two papers presented at the first group session. J. J. Cosgrove of the legal department of The Texas Co., sent a paper on "Income Tax Problems of the Oil Industry" which was read by Mr. Madison since Mr. Cosgrove could not be present. In his paper Mr. Cosgrove reviewed a large number of decisions of the United States Supreme Court on income tax problems, dealing especially with the problems of oil and mining in-

Left—Axtell J. Byles, president Tide Water Oil Co. and Z. G. Hopkins, of M. K. & T. railroad. Right—President J. C. Donnell, Ohio Oil Co., compliments J. D. Collett, Independent producer of Fort Worth on the hospitality shown visiting oil men at the Institute convention

G. W. Mosely, Fort Worth; R. R. Irwin, vice-president White Eagle Oil & Refining Co.; E. J. Seubert, Standard Oil Co. of Indiana; R. H. McElroy, traffic manager and director Standard of Indiana; E. C. Sicardi, president Union Tank Car Co.

dustries which are not permitted to report a part of their income each year as a return of capital investment from their properties in spite of the fact that each barrel of oil removed from a well decreases the total amount of oil beneath the property in question.

F. R. Angevine of New York, one of the most well known tax attorneys of the United States read a paper on "Invested Capital—Realized Appreciation." Mr. Angevine holds the theory that a corporation should be permitted to transfer earned surplus into the capital investment account as earned. Under present government rulings the earned surplus must be carried in the income account until the close of the fiscal year in which it was realized.

Valuation Problems

J. L. Darnell, petroleum engineer of New York, delivered an address on the "Valuation of Oil Properties for all Purposes." Mr. Darnell pointed out that valuations of properties may be made for a variety of purposes but had no patience with the idea that there might be different values for different purposes. "Value is value," he said, "and for whatever purpose the answer is the same. A property is worth a given sum when there is a reasonable certainty that it will return that sum plus interest within a given time."

Factors involved in valuations including ultimate recoverable oil, development, operating and overhead expense, equipment expense and discount factor, were discussed in detail. On the score of operating and overhead expense Mr. Darnell stated that the valuation engineer must take into account the economies practiced by an operator in arriving at a value.

"Problems of Oil Refining and Marketing Costs," were discussed in detail at the final meeting of the accountants when a paper on that subject prepared by R. D. Matthews, comptroller of the Union Oil Co. of California, was presented. Describing his methods of accounting Mr. Matthews said that in arriving at refinery costs he starts with the selling price of crude fuel oil as a base charging to other products the premium paid for products most in demand.

California Costs

In California costs of refining as found by Mr. Matthews have averaged 85 per cent for raw material and 15 per cent for all direct operating expenses divided as follows: Raw material 85 per cent, operation and maintenance 11 per cent, departmental general expenses and overhead 2 per cent and taxes and depreciation 2 per cent.

With relation to inventories Mr. Matthews plan is to calculate costs on current posted prices on raw materials charging all current purchases against current sales. In case of inventory appreciation realized, the profit is considered general profit and not current operating profit, while inventory declines in value are treated as general losses and not operating losses.

Higher cost figures on gasoline and other light products than are usually set up on refinery books are believed justified and demanded if all factors are included in the reckoning. Following is the general control ledger used in cost accounting by Mr. Matthews:

Debits	Barrels	Amount
Crude to stills		
Residuum returned (credit)		
Operating expense		
Fuel used		
Other materials		
Departmental general expense		
Taxes		
Employees' share of profits		
Provident fund		
Depreciation		
Credits		
Finished products		
Unfinished products		
Unfinished oil to Stills (debit)		
Filling, handling and shipping		
Refining loss (barrels only)		

Cracking Costs

Discussing cracking costs Mr. Matthews stressed the necessity of charging depreciation at a relatively high figure because of the rapidly changing character of the science of cracking which may make present plans out of date in a few years. In figuring costs on cracking ample allowance must be made for maintenance and the replacement of tubes and stills. Time lost for cleaning and repairs is a substantial cost item. Following is the book set-up of cracking costs as now employed:

	Cents per bbl. Gasoline $\ldots\ldots$
Operation and maintenance	
Labor	
Maintenance and repairs	
*Fuel	
Steam	
Water	
Electricity	
Air	
Pumping house expense	
Depreciation	
Interest	
Treating Expense and Chemicals	
Steam stilling cost	

	A.	B.
Stock cost per gallon		
*Loss of stock		
Expense above per gallon		
Overhead per gal. Gasoline		Nil.
Royalty		

*Loss of stock would represent oil converted to permanent gas, also carbon loss, so that the charge for fuel would be eliminated provided sufficient gas was made for heating the cracking units.

A.—This figure is based on the cost of stock charged.

B.—This figure represents the cost based on the selling price of stock charged, less cost of marketing.

Gilmore Misquoted

CLEVELAND, Dec. 16.—Due to misunderstanding, the remarks of James A. Gilmore before the annual convention of Indiana jobbers in Hammond recently, were misquoted in the Dec. 10th issue of National Petroleum News. The statement was made that the twelve oil men who early last January underwrote expenses incidental to having a field secretary for the Michigan association had not been obliged to pay it because of the organization's growth.

According to H. H. Ragle, president of the Michigan jobers, none of the guarantors has had to contribute as much as he expected and all twelve consider the investment a good one; but each has contributed more than the ordinary dues. The error in the record probably occurred during the few minutes after his address when Mr. Gilmore was being questioned from the floor by the Indiana jobbers.

CHICAGO, Dec. 15.—L. Dickman, owner of the Home Oil Service, has completed an up-to-date service station at the corner of 103 and State streets.

Deeper Drilling And Production Methods Get Attention

By Paul Wagner

STAFF REPRESENTATIVE

FORT WORTH, Dec. 11

DEEPER drilling and the problems incident to producing oil from lower levels than commonly practiced came in for their innings, Dec. 10, at the group session of the American Petroleum Institute having to do with operating methods.

From deep drilling in the Appalachian region to the cementing of deep wells in California and the pumping of the latter, the broad subject reached into the less understood phase of the tensile and collapsing strength of seamless casing as utilized in deep wells.

"Cementing Deep Wells" was discussed by F. F. Hill of the Union Oil Co. of California; and their pumping was a subject for John Zublin of the General Petroleum Corp., Los Angeles. Both their papers will be published later in this periodical and, therefore, will not be discussed in detail.

In the absence of H. C. Cooper of the Hope Natural Gas Co., his paper on deep drilling in the Appalachian region was read by W. B. Way of the Natural Gas Association of America. This discussion gave some of the results of 7000-7500 foot drilling in West Virginia and elsewhere in the east.

After these papers had been enthusiastically received, Professor Harold A. Thomas of the Carnegie Institute of Technology called the "class" of petroleum industry leaders together for a "lessons" on the tensile and collapsing strength of seamless casing.

The paper of Professor Thomas gave an impression largely of technical interest only, when considered in relation to its title, but it soon was apparent that the rapidly increasing use of high-strength seamless casing for deep well work had resulted in a demand for accurate information regarding its properties.

Professor Thomas stated conclusions based on experimental work at the Carnegie Institute of Technology, in co-operation with the Standard Seamless Tube Co., of Pittsburgh; he referred to available tests on collapsing-pressure made by the British Mannesman Co.; and to experiments of Professor C. B. Stewart of the University of Pittsburgh, in co-operation with the National Tube Co.

Methods of Manufacture

In part, Professor Thomas said:

"In past years the only method in general use for the manufacture of oil-well casing has been the welding process. This consists in rolling the metal into a flat strip, curving the strip into a cylinder, and welding the edges together.

"Casing of this type is necessarily made from metal which is readily weldable, the choice being apparently limited to wrought iron and low carbon steel. Since both of these materials are relatively soft and weak, it follows that welded casing is subject to a definite limitation in its ability to meet the requirements for tensile and collapsng strength of modern deep wells.

"To overcome this limitation, the seamless process of tube making has in recent times been adapted to the manufacture of oil-well casing. This process consists in rolling the metal into a round bar, piercing an opening through the bar from end to end, and elongating the bar.

"By means of the seamless process it is possible to produce casing from high-carbon steel or alloy steel of any desired degree of strength, provided only that the metal is not too hard to permit the machining of threads.

"In the regular manufacture of seamless casing no difficulty is experienced in threading with steels from 40 to 50 per cent stronger than those ordinarily used in welded casing, and in experimental work steels more than 100 per cent stronger are successfully threaded."

General Conclusions

Professor Thomas drew these general conclusions:

1. The Seamless Process permits the manufacture of casing from much stronger steel than can be used with the welding process.

2. The Pulling-Out Strength of joints of the usual type varies directly with the yield-point strength of the steel of the casing.

3. The Collapsing Strength of casing of wall-thickness suitable for deep-well work increases at a rate only slightly less than that of the yield-point strength of the steel.

Dressing and Tempering Bits

Francis B. Foley, consulting engineer of the United States Bureau of Mines, discussed the dressing and tempering of bits in the oil fields. Mr. Foley referred to a first hand study made last summer by the bureau, which is also endeavoring to obtain data on the amount of time lost due to bit changing.

Reference was made by Mr. Foley to the fact that furnaces generally in use throughout the oil fields are not designed in such a manner that their temperature can be easily controlled, even though a pyrometer were used in measuring the temperature.

Left—L. V. Nicholas, president National Petroleum Marketers Association, has an impromptu discussion with E. J. Bullock, director of sales, Standard Oil Co. of Indiana. Right—A. S. Hopkins, superintendent of Standard of Kansas refinery at Neodosha, meets up with C. L. Henderson, vice-president Vickers Pet. Co.

Howard Bennette, secretary Western Petroleum Refiners Association, and F. A. Pielsticker, Skelly Oil Co., president of that association

Election Of Institute Directors

THE election of directors of the institute for the coming year was entirely in the hands of the board of councillors, which met by groups and geographical divisions of the country, the 9th and prepared its slate of nominations. This was placed before the membership at the start of the evening session and accepted without a suggestion or remark from the floor.

Most interest in the election of directors was centered in the re-election of J. E. O'Neil, retired head of the Prairie Oil & Gas Co. as a representative of the transportation group. Councillors representing the pipe line interests decided to nominate Mr. O'Neil for re-election despite the fact he has retired from active business and is making his home abroad.

L. V. Nicholas, president of the National Petroleum Marketers' Association, was elected a director representing the central distribution group to succeed P. C. Crenshaw, Home Oil Co.

New interests to find representation on the directorate were E. W. Marland, head of the Marland Oil Co., Ponca City, Continental Supply Co., St. Louis, through W. K. Hughes, general manager, also the Skelly Oil Co., Tulsa, through W. G. Skelly, president.

Directors of the institute for the following year are as follows:

Pacific Coast Production Group

L. P. St. Clair, Independent Oil Producers Agency, Los Angeles, re-elected;
F. H. Hillman, Standard Oil Co. of California, San Francisco, re-elected;
D. S. Ewing, Ethel D. Oil Co., San Francisco, re-elected;
M. L. Requa, holding over.

Rocky Mountain Production Group

B. B. Brooks, Consolidated Royalty Co., Casper, holding over.

Central Production Group

W. S. Farish, Humble Oil & Refining Co., Houston, re-elected;
J. H. Markham, Tulsa, holding over;
J. D. Collett, Fort Worth, holding over;
Frank Haskell, Tidewater Oil Co., New York, holding over;
J. Edgar Pew, Sun Oil Co., Dallas, holding over.

Eastern Production Group

George W. Crawford, Ohio Fuel Supply Co., Pittsburgh, re-elected;
J. C. Donnell, Ohio Oil Co., Findlay, O., holding over.

Pacific Coast Manufacturing Group

H. R. Gallagher, Shell Co. of California, San Francisco, re-elected;
E. W. Clark, Union Oil Co. of California, Los Angeles, holding over.

Rocky Mountain Manufacturing Group

T. A. Dines, Midwest Refining Co., Denver, holding over.

Central Manufacturing Group

Roy B. Jones, Panhandle Refining Co., Wichita Falls, (new member), succeeding J. S. Cosden, Cosden & Co., Tulsa;
P. M. Miskel, Empire Refineries, Inc., Tulsa, holding over;
F. A. Pielsticker, Skelly Oil Co., El Dorado, holding over.

Eastern Manufacturing Group

R. D. Benson, Tide Water Oil Co., New York, re-elected;
Edward Prizer, Vacuum Oil Co., New York, re-elected; B. G. Dawes, Pure Oil Co., Columbus, Ohio, re-elected;
C. L. Suhr, Penn American Refining Co., Oil City, Pa., holding over.

Pacific Coast Distribution Group

K. R. Kingsbury, Standard Oil Co. of California, San Francisco, re-elected;

Rocky Mountain Distribution Group

E. T. Wilson, Mutual Oil Co., Denver, holding over.

Central Distribution Group

R. W. Stewart, Standard Oil Co. of Indiana, Chicago, re-elected;
L. V. Nicholas, National Petroleum Marketers Association, Chicago, new member, succeeding P. C. Crenshaw, Home Oil Co., Chicago;
W. H. Barber, W. H. Barber Agency, Minneapolis, holding over.

Eastern Distribution Group

A. L. Beaty, The Texas Co., New York, new member, succeeding A. C. Woodman, Acewood Petroleum Co., Philadelphia;
A. P. Coombe, Standard Oil Co. of Ohio, Cleveland, holding over.

Transportation Group

Ships—J. Howard Pew, Sun Oil Co., Philadelphia, re-elected;
Pipe Lines—J. E. O'Neil, formerly with Prairie Oil & Gas Co., re-elected;
Tank Cars—H. E. Felton, Union Tank Car Co., New York, holding over.

Supply Group

W. K. Hughes, Continental Supply Co., St. Louis, new member, succeeding A. Moody, Jarecki Mfg. Co.

Natural Gas Group

T. B. Gregory, Manufacturers Light & Heat Co., Pittsburgh, new member, succeeding L. P. Whitcomb, deceased.

Natural Gasoline Group

W. M. Welch, W. M. Welch Co., Tulsa, holding over.

Foreign Trade Group

W. C. Teagle, Standard Oil Co. of New Jersey, New York (Europe), re-elected;
H. L. Pratt, Standard Oil Co. of New York, New York, (Far East) holding over;
E. L. Doheny, Pan American Petroleum & Transport Co., New York, holding over.

Directors at Large

D. M. Folsom, General Petroleum Corp., San Francisco, new member, succeeding Capt. John Barneson;
F. B. Henderson, Associated Oil Co., San Francisco, re-elected;
W. G. Skelly, Skelly Oil Co., Tulsa, new member, succeeding Julius A. Germany;
E. W. Marland, Marland Oil Co., Ponca City, new member, succeeding C. D. Chamberlin, secretary and counsel National Petroleum Association;
J. F. Lucey, Dallas, holding over;
A. C. Bedford, Standard Oil Co. of New Jersey, New York, holding over;
Alexander Duessen, president American Association Petroleum Geologists, Houston, holding over;
E. C. Lufkin, The Texas Co., New York, holding over;
T. A. O'Donnell, California Petroleum Corp., Los Angeles, holding over;
W. N. Davis, president Mid-Continent Oil & Gas Association, Bartlesville, holding over;
E. B. Reeser, Barnsdall Corp., New York, holding over;
H. F. Sinclair, Sinclair Consolidated Oil Corp., New York, holding over;
George S. Davison, Gulf Oil Corp., Pittsburgh, holding over;
J. W. Van Dyke, Atlantic Refining Co., Philadelphia, holding over;
H. L. Doherty, H. L. Doherty Co., New York, holding over.

10,000 Words By Wire

DOUBTLESS, Mr. Reader, you wondered as you read your issue of Dec. 10th, at the completeness in which the early news of the American Petroleum Institute convention at Fort Worth was told in that issue.

The reason this exceptional news service could be given you lies in the fact National Petroleum News' editorial staff covering that meeting sent over 10,000 words of news matter by telegraph to Cleveland late at night, containing in detail the news of the first day.

Special arrangements were made with the telegraph company to handle this volume of news matter. Within 24 hours after it was received in Cleveland copies of the issue containing that institute convention story were in the mails going to subscribers.—Editor.

Over-Production Of Crude Oil; Its Causes And Its Effects

By Walter C. Teagle
President, Standard Oil Co. of New Jersey

Delivered at American Petroleum Institute Meeting, Fort Worth, Dec. 10

DURING the past two or three years many people in the petroleum industry have been groping about and asking why, in an era of unexampled growth and development, the rewards of the industry have been so inadequate to the service performed and the capital employed.

In common with others, I too have tried my hand at diagnosis. I have tried to read the present and the recent past. In "The Lamp," our company publication, and in some comments before a gathering in Oklahoma, I have already set forth my views.

Let me say quite frankly that the object was to promote discussion of the views advanced so that from this reaction the industry would at least develop:

1. The cause of our present difficulties
2. A remedy

all to the end that if a similar situation should threaten in the future the industry might thereby be in a position to avoid a repetition of the experiences of the past.

Words Misunderstood

In some quarters these views have had the benefit of very able and constructive criticism, which I greatly appreciate, but it is evident that others have criticised without understanding.

To the man who thinks that I consider crude oil no more valuable than coal, or that the price of crude oil is too high, of that when I refer to crude I do not expressly exclude those grades possessing certain qualities which give them a special value, such as Pennsylvania, I have only to say that I regret the limitations on my powers of self-expression.

One rather general reaction which followed the exposition of my views was that I was pleading the cause of fuel oil, because the Standard Oil Co. (New Jersey) operates a great deal of cracking equipment and through patent ownership was assumed to have an advantage in this respect.

This situation I thought was better understood, but since it apparently is not, permit me to say that there is no company, nor group of companies, which controls all cracking processes. Any refiner can not only install cracking equipment, but may have his choice of a score or more of proved designs, and if he prefers the type used by our company it can be his upon a royalty basis which is far from burdensome.

Overproduction

Now, if we were to take a vote as to the major problem of the industry during the last two years, it is probable that "overproduction" would head the poll. We all have our theories as to the causes of overproduction, and I offer mine, which are five in number.

Primarily, overproduction today is due to the fact that when estimating the gasoline requirements of the future we overlook the possibility of these requirements being supplied in a considerable part from other than straight run gasoline. Ignoring the contributions which casinghead and cracked gasoline have made to the supplies of the present we went ahead in the belief that the production of crude could never for long keep abreast of the demand for gasoline.

In the second place, although aware of the progress being made in the extraction of gasoline from natural gases and the marked improvement in the cracking processes we failed to appreciate that through these agencies the industry is itself, in meeting the demand for gasoline, now able to make one barrel of crude do the work formerly expected of two.

MR. TEAGLE'S paper on "Over-Production—Its Causes and Effects" was looked upon by many as the most outstanding contribution of recent years to literature on economics of the oil industry. It represents a great deal of study and preparation by the author in the course of which the views of others in the industry were obtained on this subject.

His address is worthy of considerable study by every man in the business and National Petroleum News, in republishing it complete hopes all its readers will devote considerable thought to it.

—Editor.

Without appreciating it, the industry had partially solved the problem of future supplies, not through the discovery of new sources of crude, but through the perfection of mechanical processes. It is difficult to realize that from the same amount of crude produced in 1921, we could with the equipment now available meet the estimated gasoline requirements of 1925.

Third among the reasons for overproduction is the fact that our petroleum stocks above ground have not performed their true function in the economic scheme of things. Just as in the case of bank reserves, these petroleum reserves were created to be utilized in time of need.

Unfortunately these stocks were accumulated at prices averaging higher than those which prevailed during the brief periods when there appeared to exist an unfilled demand for crude. Therefore, they have failed in one of their purposes, namely to stabilize the price of crude and thus meet the fluctuations in demand. As if they had not existed, crude prices have been bid up, and instead of drawing on storage, the unfilled demand has been met by new production.

Fourth, the years of inflation following the war attracted much new capital to the petroleum business with accompanying intensified competitive conditions in every branch of its activities. Evidence of this is the multiplication of service stations and the unnecessary duplication of distributing facilities, but at the same time a like transformation occurred in the refining branch in which the potential daily refining capacity showed an increase from 1,186,000 barrels in 1918 to 2,930,000 barrels in 1923. Transportation facilities multiplied in like manner.

Since the American investor loves a gamble and the premier gamble of the industry is in production, a large proportion of the new capital gravitated in that direction, and it materially augmented the production of crude.

Isolation Is Past

Finally, it required the spectacle of California crude oil moving through the Panama Canal to the doors of the Atlatic coast refineries to teach us that no producing section can ever live unto itself alone. Modern means of transportation have so multiplied that the day of the isolation of any field is past. The price of crude oil in any field can be no higher than the sum of the price of the nearest cheaper crude of like

quality, plus the cost of transportation, and it is quite conceivable that some day petroleum and its products may flow back to California from east of the Rockies just as they have come from California to the Atlantic seaboard.

In my opinion we are nearer the high road of returning prosperity if we admit frankly that most of our troubles are of our own making; that we are all in varying degree responsible, the larger companies including the one I represent perhaps in greater proportionate degree; that none of us is able to say "I told you so," and that of us all, the producer of crude is perhaps the least to blame.

The effort of the producer to find and sell crude at a profit is also the objective of the Standard Oil Co. (New Jersey) for we produce half the crude we refine.

The struggle of the producers from whom we buy is also ours, for if we pay an unremunerative price not only is our source of supply uncertain, but we must also sell our own production in the form of refined products at prices unremunerative to us. Therefore, any policy that will help the producers will help us, and any policy which will injure him will injure us.

Who Is Responsible?

Speaking as a producer, the object which most completely and distinctly meets my eye is the accumulated stocks of 530,000,000 barrels of crude and products in storage in this country. Who is responsible for it? Certainly not the producer. His only barometer of the needs of the consuming market has been the posted price.

There could be to him no other interpretation of a price advance than that the world was signalling for more crude. It was a natural asumption that a higher posted price would be the price that new production would receive, so the producer assumed an additional liability and expanded his drilling program. All this is recent history. New production came apace. The crude began to back up and some purchasing companies issued pro rata orders,

It did the producer no good to be disgruntled when told to store most of his new oil in his own tanks or take a lower price for the amount run. In fact, when following a break in the price of crude, another season rolled around and again premiums were offered and the posted price advanced, the producer did what anyone would expect him to do—he brought in more crude, and for so doing experienced precisely the same unpleasant conditions of the previous year—a repetition of pro rata orders.

The producer is interested in the current price of oil not merely because of what he has spent, but also because of what he is going to spend. The protection of what the producer has spent is a constructive act, but the protection of what he may spend is even more constructive. Would the producers, during the past two years, have spent their money for new work at a time of advancing prices had the industry been in a position to correctly appraise the factors which would indicate to the producers the trend of crude prices?

—Underwood & Underwood.

Walter C. Teagle

Diagnosis May Help

The saving of this money would also have contributed to conserving the investment already made. A diagnosis of the conditions which have existed during the past few years is therefore not a futile post mortem, but may prove to be—if correct—helpful for the future.

You will recall that one of the effects of the business inflation folowing the war was the posted price of $3.50 per barrel for Mid-Continent crude, and a differential of more than 15 cents per gallon between gasoline and fuel oil. This differential materially stimulated the more general use of the improvements in refining practice. Many cracking processes had been developed commercially, and the price spread between the market value of the two products yielded a return sufficiently profitable to encourage refiners to install more and more equipment of this character.

At the end of 1923, the industry was in a position to supply over 30 per cent of the gasoline requirements by cracking fuel oil. The refining industry had thus placed itself in a position to convert a substantial part of its low value product into its highest valued product at a moderate cost of manufacture.

Any business man is familiar with the axiom that a 10 per cent surplus of a product of free commerce will fix the selling price of the whole, and the truth of this has been demonstrated in the industry during the past two years. In 1923 the petroleum industry sold a total of 382,000,000 barrels of fuel oil, representing 52 per cent of the total consumption of all products, and realized an estimated average price of $1.11 per barrel.

An analysis has been made to determine what part of this quantity could have been disposed of otherwise than in direct competition with coal. This analysis shows that the total fuel oil business which, under other conditions, could have been sold at a price higher than coal, was not more than 228,000,000 barrels. If this is correct, it follows that in 1923—to find an outlet for a part of its surplus production—the industry was compelled to sell 40 per cent of its fuel oil, or 154,000,000 barrels, in direct competition with coal.

This, however, does not tell the whole story, as actually the entire 382,000,000 barrels were sold at a price fixed by the 154,000,000 barrels which were sold in competition with coal. In other words, the average selling price of less than 3 cents per gallon for the whole was determined by this surplus. One might add that this economic waste is being repeated on a like scale this year, and that the situation outlined still applies to the

industry east of the Rockies rather than to California where no competitive coal fields exist, and where fuel oil has almost invariably sold above the posted prices for other than the very high naptha bearing crudes.

It is another axiom of business that the market alue of any commodity is governed by the price at which a satisfactory substitute can be produced and sold. As I have just said, the price which the industry realized for its fuel oil for the years 1923 and 1924 was not based upon its intrinsic value, but in large part upon the competitive price of coal. I have also said that during the past five years the industry has equipped itself with manufacturing facilities that could produce one-third of its gasoline requirements from cracking fuel oil. This gasoline is a perfectly satisfactory motor fuel and fills every automotive requirement of straight run gasoline.

Substitute Cost Influence

The industry can produce gasoline by cracking at a moderate cost of manufacture above the value of fuel oil. Concretely, therefore, the value of the straight run gasoline would seem to be influenced by the cost of the substitute gasoline, amounting to 50 per cent of the total, produced by cracking fuel oil.

Coincidentally with the development of the cracking process, the industry had also evolved methods for the recovery of gasoline from casinghead and natural gases at a cost approximately the same as that of producing gasoline by cracking fuel oil. By these two methods alone it is estimated that during the coming year the industry can produce more gasoline than its entire output during 1918.

The influence of this all-important evolution on the quantity of crude oil needed to meet the gasoline requirements has not been appreciated by the industry. We have continued on the assumption that the value of petroleum was based primarily on its straight run gasoline contents, which—from the experience of the previous five years, would justify the same general level of prices. We failed to realize that the two new factors in our situation—the contribution of cracking and casinghead recovery—were in effect tending to displace straight run gasoline as the controlling product of crude.

I am convinced that the industry has overlooked the important fact that fuel oil has become the most formidable competitor of crude oil in the production of gasoline. This means that so long as there is a surplus of fuel oil, the value of straight run gasoline over any considerable period of time can not be higher than the cost of gasoline obtained from cracking, plus a reasonable profit, for just so long as there is a surplus of fuel oil and the price of straight run gasoline is higher than the cost of gasoline obtained from cracking, more pressure stills will be built.

Had these facts been understood, I am confident that the industry would not have continued in the belief that the general conditions during the past two years were not essentially different from those existing when gasoline was only obtainable in its natural state from the distillation of crude, and when prices, following the increase in demand, invariably advanced during the summer months.

In the expectation that each summer would bring a demand for gasoline that would require not only the current production but also exhaust the finished stocks accumulated during the winter, the refiners bid up the price of crude oil.

As a result, we have in the past two years witnessed the extraordinary situation of prices reaching their highest level during the period of lowest consumption, and their lowest level during the period of highest consumption.

Perhaps the industry would not have gone on producing so much oil destined to be sold as fuel if it had been possible to arrive at an average cost of crude oil at the wells, and to use this cost as the basis of the posted prices. The customary method of making a price to the customer on the basis of cost of the raw material, plus transportation, manufacturing and marketing expense, is not applicable to the petroleum industry.

In fact, production costs have varied so widely as to make an average estimate the wildest kind of a guess. I need not emphasize to an audience of oil men the fact that a price that might net a satisfactory return to an owner of flush production would be too low to make the operation of small pumping wells profitable.

Stocks Major Problem

The stocks of crude oil in storage are one of the major problems of the industry. We start with the fact that these stocks were accumulated primarily in anticipation of a shortage and at costs higher than the prices of crude which have prevailed most of the time, or that prevail today. It was the natural expectation that in time of shortage these stocks could have been disposed of at cost, if not at a profit. The shortage has not occurred and it has therefore been impossible to draw upon them at cost.

However, the purpose for which these stocks were accumulated, and the fact that a return of cost or a profit was not contemplated except in the event of a shortage has sometimes been forgotten, and it has often been said that crude prices would advance sharply and would remain on higher levels because the owners of these stocks could not afford to draw on them at less than cost.

This misconception may have resulted in new drilling which otherwise might not have been started. It implies a control of prices which is impossible in a competitive industry like the oil business.

Individual necessities of some purchasers, however, at times have rapidly carried crude prices by successive advances of 25 cents per barrel to levels approximating the cost of the crude in storage. The producers, being misled by these prices, started new drilling and increased stocks. Thus the problem of stocks was not solved, but aggravated.

One of the economic functions of stocks should be to prevent violent fluctuations in price. They should be used to level off the high places and fill up the low ones, thus creating stability and certainty rather than lending instability and uncertainty to the situation. Sound crude prices can not be founded on the cost of crude in storage, but upon what a highly competitive industry can obtain for its products.

For example, more than half of the product content of the crude in storage is fuel oil. Irrespective of its cost, this fuel oil content can not, under existing conditions, be sold for more than the price obtainable in competition with coal.

I am not predicting the future level of either crude or gasoline prices. These will be dependent in part on what is realized for fuel oil, and the situation of the industry will be improved as the use of fuel oil in competition with coal is decreased and its uses for superior purposes further developed.

These superior uses can be expanded with confidence, because it is not a near possibility that the industry will reach a point where no fuel oil will be available. For some years to come we should be able to obtain sufficient fuel oil from the production of fuel crudes and the residue from refining and cracking operations to be able to meet the economic demand for this product.

By "economic demand" I mean the amount of fuel oil that can be sold at prices not solely dependent on the cost of coal. East of the Rockies the problem is to find an economic outlet for fuel oil at a price which will return to the refiner at least the cost of his crude. West of the Rockies, fuel oil, as already stated, is not directly competitive with coal. The fuel oil content of the various grades of Californian crude is the base in determining the posted prices which have been graded in accordance with their naptha content. So that the suggestion of applying the value of the fuel oil content is neither new nor revolutionary.

Furnace Oil a Factor

I am firmly convinced that a more satisfactory market for fuel oil can be developed by the industry. I have not maintained that we must have cheap crude as long as coal entered into competition with fuel oil. If time permitted I would like to discourse why the refiner continues to regard the demand for fuel oil as only an outlet for his surplus. No one can tell how far-reaching will be the trend toward the displacement of coal for household use by furnace oil.

There are those in this audience who believe the industry can well afford to

spend millions for the purpose of popularizing furnace oil, sold not in competition with coal, but on the basis of its intrinsic value. They are convinced that when the public knowledge of the manifold advantages of furnace oil has become general, and equipment and distribution facilities developed, consumers will be willing to pay a price which will justify producing and running crude for the market thus created.

If it is true that the industry has underestimated the importance of fuel oil as a factor in the price structure, the question naturally arises as to the relationship of this factor to the production of crude. The answer appears to lie in the general recognition of fuel oil as the best single index we have today of the conditions existing between supply and demand. When the supply of fuel oil is so large as to force upwards of 150,000,000 barrels in a single year into competition with coal, it should be plain that overproduction exists. Any price that encourages the uneconomic use of oil should be a warning to the producer.

Are We Going Same Way?

Even now we may be following the same path traveled at this time in the past two years, and is it not apt to lead us to the same condition in which we found ourselves in the two successive summers? During the past few weeks, the consumer demand for crude has apparently been in excess of the daily supply, and some slight draft has been made on reserve stocks. Premiums are being offered, and if precedent is followed, posted prices may be advanced to meet them.

A posted price that would stimulate drilling might increase production and thus force the industry to continue on a fuel oil basis. A price for fuel oil under existing conditions so high as to materially curtail its consumption would have the same effect as an increase in crude production. If there is anything the industry does not need or is not going to need next summer it is another flood of oil.

If, following the precedent of the last two years, posted prices are bid up, then the industry must consider whether it is justified in accumulating stocks of finished products at such higher cost in anticipation that at least this higher level will continue throughout next summer. In the consideration of this question the industry may repeat the mistakes of the past two years if it ignores the effect that gasoline made by cracking will exert upon the price structure. There is a sermon for us in Judge Beaty's story of the blind mule, which ran head-on into a post—not because he didn't know it was there, but because he just didn't give a damn.

The company with which I am associated may question the wisdom of higher prices for crude at the present time. If, however, there should be a general advance, it will be difficult for us to follow because of our traditional policy to pay the producer from whom we are currently purchasing as much as can any other buyer of the several grades of crude. No company is strong enough to act alone. There is no better answer than this old myth that any company or group of companies is dominant in the industry. The industry is made up of units of all sizes, from the lone producer running a single string of tools, a distributor operating a single service station or tank wagon, to the larger aggregation of capital engaged in every branch. It is intensively competitive in every activity.

The history of the past two years has taught us that there is no easy road to success. Competition has so increased operating costs as to materially curtail profits. The excessive bonuses paid for acreage are perhaps the most outstanding example of the increase in overhead costs, and those and other factors serve to pyramid the cost of production.

Upon other aspects of the problems of production at the present time, it is not necessary for me to dwell, as they are familiar to you, and I believe that it is unnecessary for me to say in this resume of what I consider to be an evolution in the industry I am not announcing any new policy or procedure of the Standard Oil Co. (New Jersey) in respect to the purchase of crude.

Whatever changes may come must necessarily be the result of an appreciation of the situation on the part of the whole industry. We have a common problem and a common responsibility. We are all in the same boat, and our interests are mutual in a matter of pure economics such as this. My effort this afternoon is only an attempt at constructive thought, offered to you in the confident belief that when the wisdom and experience of the industry are brought to bear upon the problems confronting it, we shall soon find their solution.

WHITEWATER, WIS., Dec. 13.—The completion of a concrete highway between Whitewater and Elkhorn was recently celebrated here with a meeting and dinner of the Whitewater Chamber of Commerce and the Elkorn Kiwanis club. Winter has set in in this territory and roads have frozen smooth instead of rough as in the past years, Charles J. Weiss reports.

CHOWCHILLA, CAL., Dec. 13.—Woods & Gillette have completed a modern service station here at a cost of $15,000, according to R. T. Hand, special agent for the Standard Oil Co. of California here. The company handles Standard products.

CONNEAUT, O., Dec. 13.—Dick Tyler has just completed his new garage and filling station here. Mr. Tyler now has 31 pumps and three trucks in operation.

A. P. I. Will Intervene In Mileage Cases

FORT WORTH, Dec. 11.—The American Petroleum Institute will intervene in cases now filed and to be filed with the Interstate Commerce Commission attacking excess empty mileage settlements, it was agreed by the general transportation committee of the Institute. At least two cases have been filed with the commission thus far and others are reported about to be filed.

Attorneys for the Institute were not given a definite mandate by the committee as to what attitude they will take in the cases when they come up for hearing. It was the attitude of the committee members that some of the complainants might not present a complete case from the industry viewpoint and an irrepairable injury be done non-protestants without their having been heard.

The Institute leaders were directed to enter negotiations with the American Railway Association to obtain changes in the present charges for excess empty mileage. It is the feeling of traffic managers of the industry that empty mileage rates should not be as great on the return of cars which have been sent out loaded as rates should be on the hauling of new cars from foundry to purchaser.

Bottom Outlet Valves

Although numerous tests have been made during the course of the last year the industry has not found a new bottom outlet valve which is more satisfactory than the present valve approved by the A. R. A. H. A. Felton of the Union Tank Car Co., chairman of the general transportation committee, called for reports on tests which have been made and these will be prepared and submitted to the industry and the carriers.

It was announced at the meeting that Institute officials will meet with Col. B. W. Dunn of the Bureau of Explosives, and representatives of the railroads at Washington, D. C., on Jan. 7, to discuss the removal of inflammable placards from empty tank cars. Members of the general committee have not receded from their position that empty tank cars should retain the inflammable placards because such empty cars which have been in gasoline are even more dangerous than when full of gasoline. Gases remaining in the cars mixed with air, form a highly explosive mixture.

Resolutions were unanimously adopted by the committee expressing the thanks of the petroleum industry to the railroads for the efficiency which the carriers have shown in handling oil traffic in 1924. Suitable expressions will be sent to the American Railway Association.

Pleads For Free Hand For Oil Industry To Work Out Its Own Problems

Staff Special

FORT WORTH, Dec. 10

THE address of President O'Donnel, opening the institute convention at the afternoon session the 9th was mainly a plea against more legislation regulating the oil industry, and in fact, the industrial world generally. He stated his disagreement with H. L. Doherty's plan of state regulation by citing the experience of California operators with their state mining bureau.

The best answer to those who fear a shortage of petroleum products at some future time, he said, is to give the industry free rein to meet conditions as they arise, with the same success it has developed the petroleum business in times past, meeting increased demand for various products at fair prices to the consumer.

"I don't believe it is necessary in the petroleum industry, nor in many other lines of our industrial life, for us to run to Washington to cure every irritation we find," he said. "Life itself is built up on controversy and effort and active minds. Existence itself is maintained by problems to solve and the petroleum industry has one and it can be done well within its own borders.

"We have had for the last 15 years a great deal of activity in the various parts of the country experimenting in government. I come from a state where for a good many years we had too much Johnson. He was an active individual and convinced our people everything was wrong, that everything could be cured quickly, so we had a regular drunk on experimental legislation in California.

"We are paying for it today the highest taxes in America, and still trying to make it workable. A little of it is applied to the oil business. Henry (Mr. Doherty) says we have got to write our own ticket or they will write it for us. That is what they told us out in California, that we had to write our own ticket or the legislature would pass something that would be a damn sight worse than anything we could do.

Drew Up Own Laws

"So we wrote our own ticket. I helped write it, and it took us 12 years to get partly out from under it. I thought it was ideal. I was proud of what little part I took in it. We thought we had covered every contingency. But the great trouble is it needed state officials to administer it, and you can't make them over, you can't write your own ticket about them. They are with you.

"One of the dominating motive powers of human beings is the love of power.

"That is human nature. In California we appointed our commission or mining bureau, or whatever you call it, and we were going to get permits to do this and permits to do that and permits to do everything, but we didn't get those permits. The result of that effort, through at least ten years of time, has been that it has cost the petroleum industry of California millions of dollars, and the intention was good to start with. It was splendid. If it had been carried out in the spirit in which it was intended it would have done the petroleum industry good and would have been helpful to the state and to the people.

> As illustrating what bankers used to think of oil securities, President O'Donnell told this story in introducing President Mitchell of the National City Bank of New York.
>
> "A few years ago I used to try to borrow money from bankers and one of my friends in the banking business called me in and said:
>
> "'Tom, you will have to pay up your note or get me something in here besides oil stocks.' I said I had nothing else.
>
> "'Well,' he said, 'take your damned oil stocks home and I will try and get by the inspector with your note.'"

"I am happy to say that after a number of years' fight and contention in California, we have got a reasonable, workable body there.

"But now Mr. Doherty says that we have only got 12 years' supply of oil and he proves it by government states. I think we have got ten times twelve years' supply of oil, perhaps not in the quantity that we are now using it, but in the needful things that we will learn how to use it for.

"By the time Mr. Doherty would create the necessary machinery to administer the best law he can write that oil that he is talking about will all be gone.

Criticises Commission

"I have had a little experience—not so much as some of the other gentlemen here today in some of our national legislation to fix business generally. They passed an act in Congress with the very best intentions and very little opposition by the business life of the nation, creating what they call the Federal Trade Commission. If the commission in its early history could have been administered by thoughtful men in all of its branches and had had before it constantly the purpose to make American business healthy and to be helpful to American business there would have been very little criticism of it.

"The trouble was that too many young fellows were put into that department with socialistic tendencies. I have talked to some of them who ought to be in Russia now. They walked into our office with a sneer and a contempt for our entire institution and a firm conviction—and I believe many of them honestly thought so—that we were a lot of criminals.

"Now the Federal Trade Commission should be a useful body to American business, if properly used, and I am happy to say and believe that these years of controversy and criticism and courts and fight and effort have brought some sense into them and that it is better administered today than it ever has been in its history, largely through experience. All radical legislation of any kind that has to do largely with business life will have that effect, because of the necessity of human beings to administer with a love of power.

"What I like about the President is that I think he is going to be kind of quiet, going to be rather hard to get him to move, and even with all of Mr. Doherty's energy, I think he will sit a long time and think about it a long time, and by the time he gets done thinking, the thing that he wants to cure will be cured already.

"Our United States Senate should, and I am sure it will in time, so conduct itself in the future that the American people will regain the confidence that they formerly had in that body. That confidence will only be regained by the dignity of careful thought in any investigations they might be making in connection with our American life.

"I am not making this statement in behalf of any individual; sometimes our friends are wrong, sometimes we err. Sometimes even the best of your friends do something you regret very much. In this connection they were all my friends and as yet I have no public criticism to make and I hope the American Petroleum Institute will not go on record, and that the federal courts of this great country will be allowed to function as they should, and in the end justice will be done.

WAUSAU, WIS., Dec. 12.—Wadhams Oil Co. recently opened its six-pump service station here and the motorists appreciate Wadhams filling station service, according to E. A. Albrecht, Jr., local manager.

COLUMBUS, O., Dec. 12.—Sowers & Davis have purchased the Majestic Oil Co. of this city. H. G. Seiple, formerly with the Standard Oil Co. of Ohio, is now with Sowers & Davis.

MILWAUKEE, Dec. 13.—Kent Lubricating Co. is now represented in Germany by Arno Kehrberg, at Kleiststrasse, Berlin W. 62, to whom the company is shipping large quantities of Kent grease, according to L. H. West, sales manager.

RIO, WIS., Dec. 13.—The Columbia Oil Co., with headquarters here, has recently completed two new filling stations, one at Parduville and one at Cambria, Wis., according to C. D. Gates, secretary.

Three Units in Service— Two Units on The Way

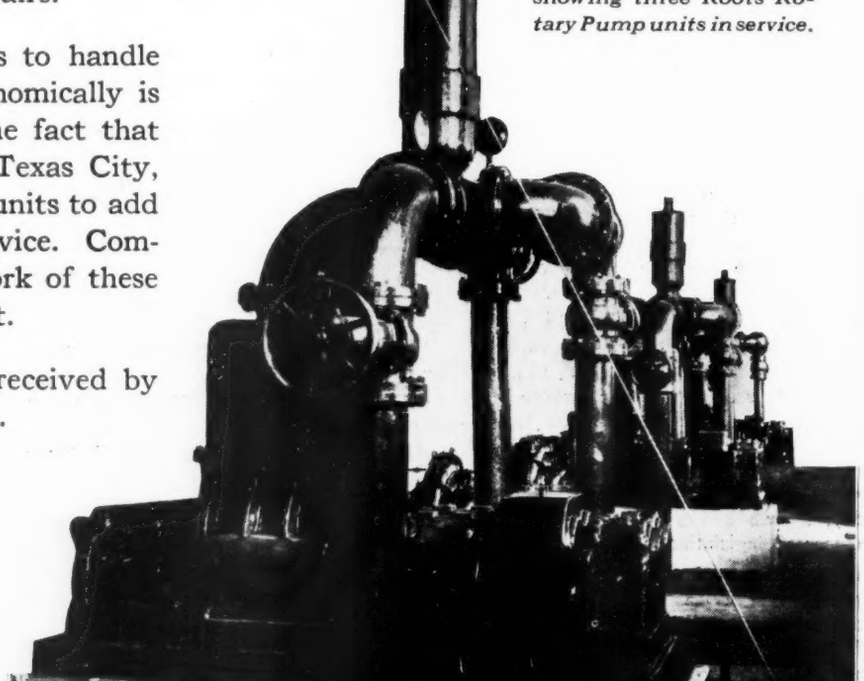
ROOTS Rotary Pumps are particularly adapted to pumping gasoline because they require no internal lubrication. The only wearing parts are the bearings and their average life is from five to ten years and frequently much longer.

Roots Rotary Pumps handle tar, crude and refined oils with the same low operating cost and absence of repairs.

The ability of Roots pumps to handle gasoline efficiently and economically is quickly demonstrated by the fact that the Marland Refining Co., Texas City, Texas, is ordering two more units to add to the three units now in service. Complete information on the work of these units will be sent on request.

More than 50% of orders received by Roots Co. are repeat orders.

Installations at the plant of the Marland Refining Co., Texas City, Texas, showing three Roots Rotary Pump units in service.



You should have the following bulletins in your files:

113—Roots Rotary Pumps
108—Roots Rotary Gas Pumps
111—Roots Positive Displacement Gas Meters
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DEPT. 46

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Report Shows Some Causes Of Dilution Of Crankcase Oil

By Paul Truesdell
STAFF REPRESENTATIVE

FORT WORTH, Dec. 10

MUCH has been learned about the causes of crank case dilution during the past year.

This is shown by the report of the Bureau of Standards on work done since last December on the motor fuel tests that are being carried out by the bureau under the joint auspices of the National Automobile Chamber of Commerce, the American Petroleum Institute and the Society of Automotive Engineers.

The report, prepared by Dr. H. C. Dickinson and S. W. Sparrow of the Standards bureau, was read before the group meeting by H. K. Griffin of the bureau, Wednesday afternoon. The topic of the meeting was "Motor Fuel and Motor Lubrication."

A new method of determining the degree of crank case dilution by vacuum distillation, worked out by T. S. Sligh, physicist of the Bureau of Standards also was reported on at the meeting by Mr. Griffin. The paper describing this method will be published in a later issue of National Petroleum News.

Criticises Oiling Systems

In a paper, "Lubrication of the Automobile Engine," Neill McCoull of The Texas Co., criticised the present design of many automobile engines from the standpoint of proper lubrication and discussed the means that are being developed to improve the lubrication.

He included air filters, oil filters, distilling devices designed to boil out the light ends from the crankcase oil while the car is running, and the multiple feed oiler. He also discussed detonation and enumerated some of the known ways to eliminate it, as the use of benzol or alcohol, use of the Ricardo head which promotes great turbulence of the vapors in the explosion chamber at the moment of firing, and tetra-ethyl lead.

"Utilization of Motor Fuel from the Standpoint of the Automotive Engineer" was discussed by J. A. C. Warner of the Society of Automotive Engineers. Mr. Warner called attention to the statement recently put out by the Bureau of Standards to the effect that they have found no motor tonic or dope that gives an increase in power except where it stops detonation, and that they had found no tonic that removed or affected the formation of carbon.

He showed slides made from photographs taken by the Bureau of Standards showing the cylinder head of a four-cylinder badly carboned and the same cylinder head, practically cleaned of carbon, after two hours or so of driving without any dope whatever in the motor fuel.

Thomas Midgley, Jr., vice-president and general manager of the Ethyl Gasoline Corp., spoke for a few minutes on the poisoning of workers a few weeks ago, which cost five lives.

He said these men gave their lives as martyrs to science and that no more such sacrifices will be necessary. He told of the experiments and tests that have been made which have demonstrated that the ethyl gasoline, containing one part in 1300 of tetraethyl lead, is harmless.

The report of Dickinson and Sparrow on the motor fuel tests goes on to say:

"Discussion in this report is for the most part confined to such results as have been obtained since December, 1923 when the last report was submitted to the institute. In that report the following conclusions were drawn:

Conclusions of Earlier Report

"Operation under constant speed and constant load.

"1. In general the same power and fuel economy is obtained with B and D fuels under warm conditions. Under cold conditions, particularly at low loads, the consumption of D fuel is greater than that of B but not as much greater as the estimated possible production. The endpoint of D fuel is about 470 F. while that of B is about 415 F. The initial of both is about the same, 122 F.

"2. Acceleration. Under warm conditions very nearly the same rate of acceleration is obtained with D fuel as with B. Under cold conditions more of D fuel is required for maximum acceleration than of B. This will mean a richer mixture adjustment causing an increased consumption of D but not as much increase as the estimated possible production.

"3. Crank case oil dilution is greater with D fuel than with B.

"The fuels B and D are two of the original group of four to determine the relative performance of which this research was orginally undertaken. Final decision as to the relative merits of the two fuels hinges upon the evaluation of crank case dilution."

The report then goes on to state that the work of the past year has been largely confined to a study of crank case oil contamination, although considerable work has been done upon the starting problem and progress has been reported from time to time on this phase of the work, although it was thought best not to include a report on it in the present report.

Concerning the conclusion reached the report sums them up as follows:

Conclusions on Dilution

"Under average operating conditions crank case oil dilution:

"1. Depends primarily on the average temperature of the cylinder walls.

"2. Is likely to reach an equilibrium value if starting periods are not too frequent.

"3. Depends directly on fuel volatility.

"4. Depends directly on the average fuel-air ratio.

"5. Does not depend much upon the piston temperature.

"6. Does not depend much upon the charge temperature or the degree of vaporization.

"It will doubtless be of interest that tests have recently been made in which oil was used as the cooling medium, its average temperature being 212 degrees F., considerably higher than the highest temperature at which tests were made with the standard cooling system, that is to say with water as the cooling medium.

"Under such conditions the amount of dilution after a 10-hour period of operation was extremely small and that the viscosity had actually increased.*

"It is to be anticipated therefore that the use of a steam cooling system or of any system which permits the maintenance of the cooling medium at a higher temperature than is now possible with the conventional water-cooled installation will prove decidedly advantageous from the standpoint of reducing the rate of crank case dilution.

Normal Running Conditions

"In what has been written thus far attention has been directed repeatedly to the fact that conditions of normal operation were being discussed and not those that prevail during the starting period.

"On a cold winter morning it may be necessary to take into the cylinder 10 or 20 times the normal amount of fuel in order to obtain sufficient fuel vapor to form a combustible mixture.

"With the piston at lower center this unvaporized fuel may come in contact with a large area of oil film. It dilutes

*It may not be generally appreciated that in the absence of dilution the normal behavior of oils is an increase of viscosity with use. Some tests of used oils from cars equipped with dilution stills show quite appreciable increases of viscosity even though a small percentage of dilution is present in the oil.

this film and eventually finds its way into the crank case. It is evident that in a type of service involving frequent starts and comparatively short periods of continuous operation, the amount of diluent added to the oil will be large and unless the diluent is eliminated at a fairly rapid rate the oil will speedily become of too low a viscosity to give satisfaction.

"It appears desirable, therefore, to give some attention to the specific problem of the elimination of the diluent from diluted oil.

"In order to study this problem tests were made in the following manner. First, the actual dilution of the oil was accomplished by operating the engine with ordinary commercial gasoline while using a rather rich mixture and keeping the temperature of the jacket water rather low.

"When the oil had been diluted sufficiently, aviation gasoline replaced the commercial gasoline as fuel. It is not likely that this caused any material change in any of the engine temperatures.

"It did to all practical purposes, however, stop the addition of diluent to the crankcase oil. This was proved by engine tests in which no perceptible increase in dilution occurred over a 10-hour period during which aviation gasoline was the only fuel employed.

"With no diluent being added, changes in the percentage of dilution must be due solely to the elimination of the diluent.

"In general then it may be stated that from the work of the past year there have come a satisfactory method for measuring dilution, a reasonable explanation of the mechanism of dilution and much additional information as to the factors influencing the rate of dilution. Such knowledge does not cure the trouble but does suggest where and how relief may be sought."

Abridged Table For Temperature Volume Corrections Is Approved

Staff Special

FORT WORTH, Dec. 11

APPROVAL by the advisory committee of the American Petroleum Institute of an abridged table for temperature-volume corrections for petroleum products was announced at the group session this morning.

The general topic of the meeting was "Problems in Connection with the Storage and Transportation of Oil."

Dr. R. P. Anderson, technologist of the Institute, explained that the table had been prepared for convenient use, from the unabridged table compiled by the Bureau of Standards and the American Petroleum Institute.

The reason for preparing the abridged table was to avoid the necessity of using the very voluminous complete table. The abridged form which has been recommended by the advisory committee to the directors of the Institute, also has the approval of the Bureau of Standards. Committee D-2 of the American Society for Testing Materials also has added the weight of its approval to the shortened table.

Where the unabridged table of the Bureau of Standards has 90 horizontal columns, one for each gravity from 0 to 90, the abridged table has but six columns representing gravity groups. These six are:

Group Number	Coefficient of Expansion at 60F.	A. P. I. Gravity Corresponding to Coef. Of Expansion	Gravity Range Of Group
1	.0004	22.3	Up to 34.9
2	.0005	44.3	35 to 50.9
3	.0006	57.6	51 to 63.9
4	.0007	71.6	64 to 78.9
5	.0008	85.6	79 to 88.9
6	.00085	91.4	89 and up

The following table prepared by Dr. Anderson shows respective multipliers from the unabridged and the abridged tables for 51 gravity material, showing the difference in the two multipliers through the gravity range of 0 to 120 F.

MULTIPLIERS FOR MATERIAL OF 51 GRAVITY

Temperature °F	Abridged Table	Complete Table	Difference
0	1.0359	1.0328	—0.0031
20	1.0240	1.0219	—0.0021
40	1.0120	1.0110	—0.0010
60	1.0000	1.0000	0.0000
80	0.9880	0.9890	+0.0010
100	0.9758	0.9780	+0.0022
120	0.9637	0.9670	+0.0033

Another feature of the group meeting was the "Report of Investigations on Methods of Determining Vapor Pressure of Gasoline for Transportation Classification," by H. D. Shoemaker of the Standard Oil Co. of New Jersey.

Mr. Shoemaker told the history of the work on establishing proper methods of vapor pressure determination, went over the work that is at present being done to standardize on some satisfactory method and emphasized the fact that the establishing of rules is not the whole answer to the safety problem.

He pointed out that every accident due to gasoline fires while handling motor fuel in tank cars had come from carelessness or ignorance or the violation of existing rules and regulations and not from faulty rules or faulty methods of determining vapor tension.

L. F. Bayer of the Tidal Refining Co. corroborated this point, stating that so far as he knew every disastrous gasoline fire in recent years has come while the car was being unloaded and not while loading.

He stated his opinion that comprehensive work should be done to educate men employed in unloading gasoline from tank cars as to what the hazards of handling are and how to avoid them. Mr. Shoemaker's report on vapor pressure testing methods will be published in a later issue of National Petroleum News.

The third phase of the meeting was a discussion of lightning protection of oil storage tanks which was opened by a preliminary statement by Ralph J. Reed of the Union Oil Co. of California. Mr. Reed's paper, which dealt with some of the experiences and observations of himself and his company will be published in a later issue.

The discussion of lightning protection was joined in by F. A. Epps of the Tide Water Oil Co. and short talks were given by Dr. Schaefer of Johns-Mansville and Dr. Skinner of the Westinghouse Electric Co.

Dr. Schaefer discussed experiments that had been carried on in lightning protection by means of a wire cage placed over the tank. Dr. Skinner, in discussing the bonding of reinforcing material in concrete tank roofs to the metal in the sides of the tank and the grounding of the whole, said that welding was necessary to make a real connection between the metal in the roof and sides of the tank.

He said that experiments with heavy voltage machines which simulate lightning had shown that two copper wires, making contact, did not constitute a good connection when such a heavy shock is thrown through them and that sparks would jump from one wire to the other. He appealed to the fire protection engineers in the oil industry to pass on information they might obtain to the Engineering Standards Committee of which he is a member, for their use.

WINDSOR, MO., Dec. 11.—Leonard Oil Co., distributor of Shell products, has just opened a service station at Columbia, this making three stations and seven curb pumps operated by the company, according to John N. Taylor of Columbia.

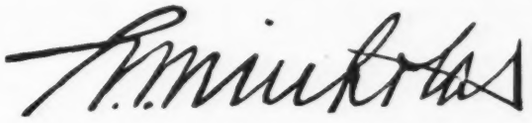
A frank statement of purpose by an oil trade association

Active, aggressive and, we believe, fair competition now governs in quite a large measure the marketing of petroleum products in the United States. This acceptance of fair play in the distribution of a great national necessity is due primarily to the two-fisted efforts of independent oil merchants, many of whom are now banded together in the National Petroleum Marketers' Association.

Beyond the limits of this orderly development, there remains a twi-light zone in which operations are still carried on without definite allegiance to constructive policies, principles and ideals. Because in the very nature of things a twi-light zone breeds distrust and demoralization, this Association thinks it a duty to illuminate this situation, where it exists, by the white light of clean business methods openly declared and courageously followed.

Enlightened thought and collective action will set the guideposts for continued progress.

National Petroleum Marketers' Association



PRESIDENT

This is one of a series of statements authorized by the Board of Directors and paid for at regular advertising rates.

National Petroleum Marketers' Association, General Headquarters: 624 S. Michigan Boulevard, Chicago, Illinois.

Final Report On Casing Standardization

By J. Edger Pew
General Chairman Institute Committee on Standardization
Delivered At American Petroleum Institute At Fort Worth, Dec. 10

AT THIS time your committee has completed its report as applied to casing, and has made a general specification covering the manufacture of all kinds of pipe for oil country use. This report has been adopted by directors of the American Petroleum Institute, and has been published, and is already in possession of the members of the institute.

There yet remains to be formulated and to be supplemented to this report a more complete specification as to tubing and drill pipe, and possibly line pipe. Additional tables remain to be made covering threads, etc., on these grades of tubular material—that is, on tubing, drill pipe and line pipe. Your committee will expect to work in co-operation with the Rotary Equipment Committee and with the Committee on Oil Well Machinery and Pumping Equipment, before making the recommendations necessary for the supplement to this report.

It was thought advisable to have adopted the completed report as to the general specifications for all kinds of tubular goods, and also the completed report on casing. The demand for this was urgent and the adoption of the report permits the immediate use of these specifications.

We hope to complete our work as applied to these other grades of material as early as possible. The report completed and adopted by the American Petroleum Institute gives the consuming trade an opportunity to order its casing as soon as the gauges can be had, and also to order all grades of tubular goods with A. P. I. specifications, using the present gauges for joints, until a final determination is arrived at by the co-operation of the several committees interested, as to what changes, if any, are desirable.

This work was first undertaken by the Mid-Continent Oil & Gas Association in 1922, with the purpose of solving some of the difficulties of the casing problems resulting from the deeper drilling in the Mid-Continent and Gulf Coast oil fields. At its annual meeting in December, 1922, the American Petroleum Institute requested that the work of this Committee be enlarged to include the entire country, and that the Committee work under the auspices of the Institute. Thereafter the work was carried on under the direction of the American Petroleum Institute, and the Committee was enlarged to include representatives from all of the important oil producing areas of the United States, and also of the pipe manufacturers.

The tubular goods now used in the oil fields under the so-called "Standard Specifications" have long since passed out of any semblance of a standardized product. Rotary drilling and deeper drilling, both with rotary and cable tools, has made impossible under many conditions, the use of the old and generally accepted specifications. New sizes and special specifications are continually being demanded by the pipe users, and have been for many years past.

The result of this has affected the oil industry in many ways. It has increased the cost of our pipe. It has increased the difficulties of using the pipe to be obtained and it has made it difficult, and especially to the smaller operator, to get the pipe for his requirements, certainly without great delays at least.

In the effort to meet the requirements of their customers, the manufacturers are making pipe that differs in threads and tapers, and in other matters of specification, to such an extent that the pipe of the same sizes of one manufacturer cannot be safely used in the same sized string of casing of another manufacturer; nor can it be used with his own pipe under a slightly different specification as to taper, or pitch of thread, as he is frequently asked to do. Every user of pipe knows the difficulty of keeping pipe of the same size separated in the field, but possibly of different makes, or of different threads, either as to the number of the threads per inch or as to the difference in the taper. This might be possible when the pipe is new, but after it has once been used it is impossible, even in the best of organizations.

Many of the leaking casing jobs are a result of these conditions, as are undoubtedly also many of the cases of lost holes from dropped strings of casing. These are frequently blamed on the manufacturer, but if the truth were known many cases could be traced directly to a lack of standardized casing, making such mistakes possible in its use.

Your Committee has endeavored to remedy as many of these conditions as possible, and with the new specifications believes much will be accomplished for the benefit of the entire oil industry in

New Specifications

I wish to briefly call to your attention what your Committee believes are some of the accomplishments of these new specifications.

1st. They should give a material that will meet all the requirements of strength of walls and of tensile strength for all present drilling, with a two to one factor of safety; also of such dimensions as to give sufficient clearances between the walls of the different sizes of casing; also full data as to sizes and weights and test requirements for different depths; and provisions for identifying these different sizes and weights.

2nd. A specification for a better grade of the material of which the pipe is made.

3rd. A uniformity of pitch and diameter of thread and of taper of thread, of all manufacturers, all made from the same master gauges for the same size of pipe.

4th. By the adoption of standards of size and of manufacture, and by a strict adherence to these, both by the manufacturers and the users, there will be a great reduction in the number of sizes of pipe and of the number of specifications for the same sizes over that now being made and used and consequently a saving in cost of manufacture and in the difficulties and hazards of the user.

5th. The specifications call for a greater average of length of joint, of all grades of pipe. A saving both in the cost of handling in the field, and also a proportionate reduction in joint difficulties.

6th. The specifications are definite and provide for definite inspection, and eliminated from A. P. I. stamped pipe any material rejected under any inspection.

We realize that these specifications are not perfect, and that from time to time will have to be amended as the necessity for the same develops. We believe they are a great improvement over present conditions, however, particularly so for the average buyer and user of pipe, both in giving him tubular goods for his requirements that would not otherwise be available to him.

The Committee asks that you endeavor to co-operate in making the specification adopted a real standard for use, and will be glad from time to time, either through its secretary, Mr. Young, or its chairman, to give full information as to the progress of the manufacturers in getting ready to fill any orders under this specification.

Before placing your orders for tubular goods, we suggest that you analyze the conditions under which you wish to use the casing, then consult the A. P. I. specification, and place your order specifying definitely what you want, and calling for A. P. I. specifications. If you are unable to get the particular goods, take the matter up with Mr. C. A. Young, secretary, Standardization Division of the American Petroleum Institute, and he may be able to assist you.

It is only by close adherence to any standardization program by the purchaser that the work of standardization can be made to succeed, and the resulting benefits realized.

Oil Company Manager, Geologist, Himself Recounts Progress Of 15 Years

By E. De Golyer,
Vice President and General Manager, Amerada Petroleum Corporation.

Delivered Before American Petroleum Institute at Fort Worth, Dec. 10

FIFTEEN years ago there were not more than a score of geologists, outside of the members of the federal and state surveys, who were engaged chiefly on oil problems; today there are considerably more than a thousand. Then, the companies having active geological departments could have been counted almost on one's fingers; a company with a geological department was the exception rather than the rule. Today this position is reversed.

Someone in the oil industry has always had to guess where new pools were to be found and in what direction newly discovered pools were likely to extend. Nothing could be more natural, in the face of the rapid expansion of the industry during recent years, than that a group of specialists in this particular problem should have been developed.

Who could be better qualified to guide a search for new pools than men who had prepared themselves, so far as possible, by a study of the characteristics and peculiarities of known oil deposits, and what group of men were so well trained to make such studies as the geologists.

Oil and gas are minerals found in the rocks, and geology has concerned itself with a study of the rocks since long before the beginning of the oil industry. The geologist was fortunate in finding a new use for his chosen science in the oil business and the oil industry was equally fortunate in finding men already partially equipped to become specialists and even experts in the search for new oil pools. One might paraphrase the famous saying of one of the old French philosophers and say that if geologists had not already existed, it would have been necessary to "invent" them.

It may not be amiss, in dealing with this subject, to go back to fundamentals, define some of our terms, and establish historically the entrance of the geologist into the oil industry. According to Webster, a geologist is "one versed in geology" and geology is further defined as "the science which treats of the history of the earth and its life, especially, as recorded in the rocks" This is a broad definition, however, and perhaps a better working definition for geologist would be "one who makes a special study of the rocks."

Comparatively Recent Science

There doubtless have been speculations along these interesting lines since primitive man first achieved enough intelligence to look about him and inquire as to the origin of the earth upon which he lived, but geology as an individual science began to take form and stand out from the field of natural philosophy during the latter part of the eighteenth century, or roughly, a hundred years before the discovery of the Drake well and beginning of the petroleum industry.

In this study of the earth's history, as revealed in the rocks, the geologist acquired new knowledge regarding the formation and structure of the rocks themselves, just as botanists have acquired new knowledge of the habits and structure of plants from a study of plants, and zoologists have come by new facts regarding animals from close observation and study of animal life.

Geologists at an early date became interested in the practical application to man's needs, of their newly won and rapidly increasing knowledge of the rocks, chiefly by using it as an aid to the finding and mining of the minerals, in fact, the mining industry might be said to be the mother of geology, and a special branch of the science—economic geology—began to develop.

Petroleum geology is a highly specialized form of economic geology, concerning itself solely with the finding and production of oil and gas.

Almost with the completion of the first oil well in 1859, geologists began to study oil fields and to give consideration to the manner of occurrence of this mineral—petroleum. Within two years, both Professor E. B. Andrews of Marietta, Ohio, and T. Sterry Hunt of Canada, had described the occurrence of oil in anticlines, and Hunt, at least, seems to have had a remarkably clear understanding of the effect of geologic structure upon the accumulation of oil into pools. Hans von Hoofer, the Austrian geologists, in 1876, also concluded that most of the oil in the Apalachian field was found in anticlines.

The discoveries of these early pioneers seems to have been of little or no practical importance to the oil industry at the time, and it was not until the rediscovery of the half-forgotten and altogether neglected anticlinal theory by Dr. I. C. White, then professor of Geology at the University of West Virginia, as a result of field work undertaken in June, 1882, for one of the subsidiaries of the old Standard Oil Co. of New Jersey, that any serious attempt seems to have been made to apply the theory in a search for new pools.

Anticlinal Theory Attacked

This rediscovery of the anticlinal theory by White did not result in any immediate acceptance of geology by the oil industry, White did not publish his theory until 1885 and, even then, it did not meet with the general approval of geologists.

Members of the Second Geological Survey of Pennsylvania, in particular, attacked the theory bitterly and J. P. Lesley, head of that survey, even went out of his way, in an address as retiring president of the American Association for the Advancement of Science, to brand it as a failure.

The theory was ably and enthusiastically supported, however, by the older Orton, state geologist of Ohio, who established its validity for the Ohio fields, and with its successful application to the finding of new pools by White, it came gradually to be accepted generally by geologists.

The development of petroleum geology during the next score of years was a relatively slow and tedious process. A certain amount of commercial geological work was done in the industry, for the most part in a sporadic and casual manner as a side line by university professors, and a few general field studies were made by state and federal surveys.

Early Oil Country Work

In 1897, E. T. Dumble became consulting geologist to the Southern Pacific Railroad and, in 1899, W. W. Orcutt organized and headed the geological department of the Union Oil Co. of California. These were two of the earliest formal geological establishments having to do directly with the oil industry and it is interesting to note that these pioneers have continued in the business relationship thus established down to the present day. H. B. Goodrich, in 1899, began work as a petroleum geologist in Canada and returned shortly to the United States and has continued active in such work to the present time. There were doubtless other early petroleum geologists of whose work I am not informed.

The foundation for the more general acceptance of the geologist by the oil

industry, which prevails today, was undoubtedly largely laid by the series of intensive studies of known oil fields made in the early nineteen hundreds by the United States Geological Survey. The reports of the examinations of pools in Pennsylvania by R. W. Stone, and F. G. Clapp; in Ohio by W. T. Griswold and M. J. Munn; in Coastal Texas and Louisiana by C. W. Hayes and William Kennedy, as well as by G. D. Harris and A. G. Veatch of the Louisiana Survey; and above all, California by Ralph Arnold, Robert Anderson, Harry Johnson and others, for the first time made available detailed reports covering a number of widely distributed pools.

From the study of the reports covering these examinations, a fair minded investigator could not escape the conclusion that the geologist could profitably be employed in the task of searching for new oil and gas prospects.

About 1907, many of the men who had made these early reports for the federal survey, established themselves as consulting geologists and from this period until 1913-1914 geology won its way rapidly into the industry. Since 1914, the employment of geoloists has been fairly general.

Position In Industry and Future

So much for the entrance of the geologist into the petroleum industry. I should like to address my remaining remarks to two phases of his position; firstly, his relationship to the business of oil production and, secondly, the development and future of his work.

The geologist is popularly supposed to "find oil." That sorrowful phrase "a geologist said there was oil" has come to be a commonplace ending for the many sad accounts of the drilling of dry holes and in such tragedies, by implication, at least, the geologist is usually the villain.

As a matter of truth, "finding oil" is the business of an entire industry and the work of a geologist, as important as it may be, is not absolutely essential nor does the geologist have any open sesame which will enable him to be uniformly and constantly successful. If he did, oil would be worth even less than it is now. The oil market would be a complete wreck.

That his work is not absolutely essential is apparent to anyone. The oil industry ran on for 50 years without any marked assistance from the geologist; many important companies have achieved success without his aid, and millions of barrels of oil have been found and produced without any geologic assistance whatsoever.

The same adverse criticism, however, might be leveled at any of the professions. You might win a law suit without the aid of a lawyer; one might recover from a serious illness without the aid of a doctor; and it is even conceivable that important and serviceable works could be explained and constructed without the advice of an engineer. The function of any of these professional men is to increase the chance of success and reduce the risk of failure. These professional men are experts in certain matters by reason of their studies and experience.

E. DeGolyer

Risks of Failure Reduced

So it is with the geologist. He is an expert in rock formation and, if a petroleum geologist, in the relation of petroleum deposits to the rocks in which they are found. His function, in the oil industry is to increase the chances for success and reduce the risks of failure. It is apparent since he has been generally tried in the oil industry over a period of years long enough to provide a fair test, and has been accepted by it, that he can profitably perform this function.

In order to get a more concrete expression of his function, I should like to be able to express in a numerical ratio the chances for success on an ordinary hit-or-miss wildcat well and to express similarly the chances for a wildcat well drilled on suitable geological structure.

Unfortunately definite statistics are not available. I have been told that in the Dutch Indies the chances for an oil pool on an anticlinal structure are three in four. Certainly there is no area in the United States with such high degree of probability. I have no statistics for the chances of success on a random hit-or-miss wildcat well though I suspect that it may be one in several hundred and that the chances of success on an anticlinal location in Oklahoma, for example, may not be better than one in twenty.

Let us assume for the sake of argument that the chance of a random location is much better than I believe it to be, say one in a hundred, and that the chance on an anticlinal location is much worse than I believe it to be, say, one in fifty. It follows that the chance of success under these ratios, which I believe to be under statements of real conditions, will be doubled by taking the anticlinal location and that you can profitably engage a geologist to find it for you.

The further moral is that if one is in a continuing business and drills a number of wells over many years, he should get a definite return according to the law of averages, but if one is only prepared to drill one or two wells, he is indulging in rather a hazardous speculation for high stakes and has no just cause for complaint if he fails.

Future of the Geologist

As to the future of the geologist in the petroleum industry, I have no desire to repeat and you probably are even less inclined to hear the constantly recurring, warning as to the exhaustion at

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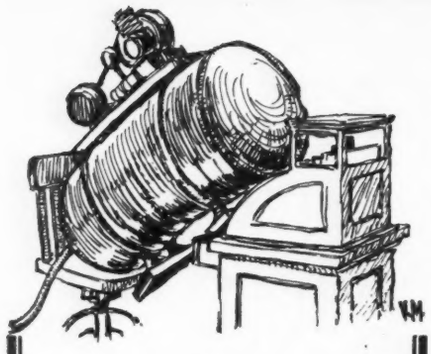

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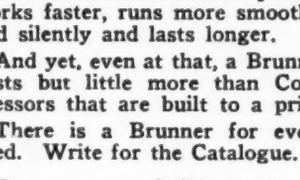

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some future date of our petroleum resources. I have no wish to attempt to prophesy in such direction but I think that there can be no argument but what our petroleum resources, whatever they may have been in the beginning and whatever they may be at the present, are a gradual diminishing asset.

If one takes any given area, such as the United States, it is evident that the first hundred pools to be found will be those which best express themselves at the surface either by oil or gas seepages, by geologic structure, or by such other indication as most appeals to the prospector. It is evident, also, as the number of discovered pools increases, the number of pools yet to be discovered decreases.

It follows along these lines of argument that it will become increasingly difficult in the future to find new oil fields and that, unless the geologist can improve his technique, the time will come when he can be of little or no further assistance to the prospector for oil and that the industry will be reduced to pure chance in the discovery of new pools.

During the ten or a dozen years that he has been actively engaged in the petroleum industry, the geologist has improved to a remarkable degree his method of attacking the prospecting problem. If we take the Mid-Continent as a type area, we find that in the beginning the geologist's ability to map an anticline was confined generally to anticlines where the dip of the rocks could be seen by the eye and perhaps even measured with a pocket clinometer.

The next step was to replace this crude method by that of running out and determining the elevations of rock outcrops by plane table. This method, still of value today, was shortly supplemented by sub-surface studies. The elevations of certain recognizable beds were determined from well logs structure, contour maps were made and as a result of such work oil pools were found which had not been indicated by other methods.

One of the earliest successful wells drilled by the company with which I am connected in Oklahoma, a well which resulted in the development of a prolific Wilcox pool, was located on a dome, the only evidence for which was the dip away in all directions from a central point of a certain oil sand as shown in the logs of nearby dry holes. The well was located solely on dry hole information. Today, hundreds of thousands of dollars are being spent in digging for geologic structures with core drills in areas where rocks are not exposed to the surface.

Research Merits Encouragement

The limit of possible refinement and use of new methods, remarkable as are the results already secured, has by no means been reached. Under any condition research for further improvements and new methods wil be continued by geologists themselves and by individual companies. There ar[illegible] searches, however, which sho[illegible] ried forward by the industry as a [illegible]

Any single one of us may think tha[illegible] the problem of the origin of oil for example is a matter which is of scientific or academic interest and of no particular practical importance. But the problem is a broad one—broad and fundamental enough to have an attempt at solution sponsored by the entire industry—and its solution could easily be of inestimable benefit to the industry. There are other problems of similar importance.

Certain researches now being carried forward by individual companies might be more profitably and more successfully handled by the industry as a whole.

During the past few years geophysical methods have been brought from Europe and tried out in the Gulf Coast with remarkable success. These methods, the modern scientific representatives of the peach tree or hazel twig, the divining rod, or the wiggle-stick, do not pretend to indicate the existence of oil pools but they do indicate in certain instances the existence of salt domes, that peculiar type of geologic structure with which oil pools are generally associated on the Gulf Coast.

By means of such delicate physical measurements as that of the variation from place to place of the force of gravity or variations in the speed of transmission of artificially induced earth tremors, it has been possible to find, almost, if not quite, as many domes within a few months as had been discovered within the previous fifteen years.

Four domes have been discovered up to the present by this method, three of them by a single company. If a single company can thus profitably indulge in research after new methods, it seems certain beyond reasonable doubt that a sanely considered research program could be profitably backed by the industry as a whole.

I realize that a program for attempting the improvement of oil finding methods may not commend itself at the present time to an industry already harrassed by over production, but a research is a matter of years rather than months and if the results of research are to be available when they are most needed, work must be started in advance.

NEW YORK, Dec. 13.—The Oil Transfer Corp. has just added another new oil barge to its New York harbor equipment, for the transportation of bulk gasoline and oils for oil companies from refineries and terminals to the companies' or their customers' stations about New York harbor, Hudson river and Sound points, according to D. Whittlesey, president.

This service not only makes possible a saving in freight over tank car shipments but also secures much quicker dispatch, Mr. Whittlesey says. The service may be extended to other Atlantic ports.

Mid-Continent Watching Wortham; Tonkawa At New High

By A. F. Hinton
STAFF REPRESENTATIVE

TULSA, Dec. 13.

HAVING spent the major portion of the past week in scouting the lobby of the Texas Hotel at Fort Worth, during the meeting of the American Petroleum Institute, the writer was forced to allow Oklahoma and Kansas production developments to jog along without his usual personal supervision, and is therefore not so closely in touch with current developments as usually is the case. However, the work of drilling up all available territory in the Mid-Continent was left in capable hands during the writer's visit to Fort Worth, and, aside from a slight falling-off in production, it is believed that his absence brought no deleterious results.

Operations in Oklahoma and Kansas have had to take a back seat from the standpoint of general interest during the past week or two, anyway, as the principal question before the house has been as to whether Wortham would or wouldn't, following the comparatively poor showing of one of the wells there. The A. P. I. finally decided that this showing would have nothing to do with the field's status, believing that it will reach production totals predicted for it, in spite of the slight lessening of potential area as a result of the small well.

Now that this has been definitely decided, the rest of the Mid-Continent has about made up its mind that crude prices will not advance as long as the threat of Wortham exists, and, indeed, the impression prevails in some quarters that prices will do well to hold their own over the next month or two, if Wortham is to be as big as generally predicted. However, when general opinion as to crude oil prices crystallizes in one direction, it not infrequently happens that the actual course of events takes the opposite direction, which means that we shouldn't feel badly about it if we guess wrong.

Operations in the Mid-Continent appear to have been in a state of suspended animation for the past two weeks, as if all eyes had been turned on Wortham, allowing work nearer home to be neglected for the time being. Whether this is the true reason or not, the fact remains that news has been scarce. When conditions are normal, Oklahoma production usually is rising or falling with great rapidity, causing joy or apprehension as the case may be, but at least providing something to write about. For the past three weeks, as indicating that conditions have been stagnating we have been unable to scare up a greater production change than 2000 barrels either way.

The past week, for instance, Oklahoma's production declined 2149 barrels, according to our estimate, and the state averaged 525,540 barrels daily. Last week, it was 527,689 barrels, and the week before that, 525,435 barrels, or almost exactly what it is now. During the week now under review, Papoose was the only field of the active group to show an increase, or to show any material change one way or the other. The other fields all declined but in remarkably small amounts, indicating that they can get back to the upward swing as soon as they can get their minds on their regular work again.

The most interesting feature of the week's developments was the fact that the deep wells at Tonkawa made a new high record when they produced 89,363 barrels for the 24 hours ending the morning of Dec. 12. While this is the highest day's output yet recorded, eclipsing by a small amount the figures set Sept. 13 of 88,950 barrels, it is interesting to note that the new record was made by 56 wells, while only 25 wells contributed to the previous high mark. During the week in which the former record was made the field as a whole averaged better than 112,000 barrels daily, a figure which it has not again been able to attain, although it is likely to exceed it within the next week or two

In spite of this record-breaking deep well production, Tonkawa averaged less per day than it did during the preceding week, dropping off 2440 barrels to 105,505 barrels daily. The deep well output fluctuated violently during the week, jumping 9100 barrels the latter part of the week after having decreased 5600 barrels earlier in the week. Starting the week with 51 deep wells, five were added during the week, and they were producing about 3500 barrels per day more at the end of the week than at the start. Average daily production of the deep wells was 84,678 barrels, as compared with 86,159 barrels the preceding week. Performance of these wells by days during the week was as follows:

	Production	No. Wells	Average Per Well
Dec. 6	85,817	51	1,680
Dec. 7	83,750	52	1,610
Dec. 8	80,213	52	1,[illegible]45
Dec. 9	81,867	53	1,[illegible]40
Dec. 10	84,030	53	1,5 0
Dec. 11	87,708	56	1,565
Dec. 12	89,363	56	1,600

Current Production

Burbank, with four new wells, bringing the total to 1654, held almost stationary in production over the week, declining 240 barrels to 70,840 barrels daily. The Osage county side of the field produced 57,560 barrels daily from 1459 wells while the Kay county side accounted for 13,280 barrels, from 195 wells. Cromwell reported six new wells, to a new total of 213, and declined 724 barrels in output, to a daily average of 46,380 barrels.

Papoose, with four new wells, and a total of 69, was the only one of the fields to show a marked increase, going up 1090 barrels to a daily average of 31,160, the highest figure it has yet attained. Stroud had one new well or 64 in all, and averaged 3460 barrels in production, a decline of only 55 barrels from the preceding week. Tonkawa reported four new wells, bringing its total to 724, and declined 2440 barrels in production, averaging 105,505 barrels daily. Wewoka, with 97 wells, a gain of two, declined 645 barrels to a daily average of 12,345 barrels.

Wells Completed

For the third consecutive week, there have been 77 completions reported in Oklahoma. During the week just closed, these 77 completions consisted of 42 oil wells, nine gas wells, and 26 dry holes. Last week the same total number was divided 35 oil wells, 10 gas wells, and 32 dry holes.

The 42 oil wells included in this week's report had a total initial production of 35,166 barrels, giving them the remarkably high average per well of 837.3 barrels. This is far in excess of last week's figures, when 35 wells accounted for 14,250 barrels, with a per-well average of 407.1 barrels.

Completions reported from Kansas this week totaled 155, of which only three were oil wells, two were gas wells, and 10 were dry holes. Last week, there were 17 Kansas completions divided five oil wells and 12 dry holes. The three oil wells included in this week's report were small in initial production, totaling only 175 barrels, with an average per well of 58.3 barrels. Last week, five wells brought in 1124 barrels of new production, with a per-well average of 224.8 barrels.

Good Well in South Vernon

FORT WORTH, Dec. 13.— Several fair sized completions were reported this week from the new South Vernon pool, with only one well better than 1000 barrels. This was the Bridwell and Heydrick No. 4. Stephens, making 1400 barrels, at 2040 feet. No extensions, or news of particular interest was provided by the developments of the past week.

FORT WORTH, Dec. 13.—The Boyd Oil Co., which has been the designation of the Humphreys interests since the sale of Mexia and other Texas holdings to the Pure Oil Co., is to be known in future as the Humphreys Boyd Oil Co., according to announcement from the Humphreys offices this week.

Drilling Operations in Oklahoma, Kansas and N. Texas Dec. 13

	Dec. 13 Loc.	Rigs	Drg.	S.D.	Week Total	Ending Dec. 6 Loc.	Rigs	Drg.	S.D.	Total
Oklahoma										
Burbank	..	1	25	...	26	2	2	25	...	29
Other Osage	4	14	57	11	86	10	15	55	9	89
Bristow-Cushing	8	24	82	35	149	6	20	83	35	144
North Oklahoma	7	19	75	67	168	9	19	72	70	170
South Oklahoma	9	14	104	65	192	9	12	108	64	193
Muskogee	..	7	25	30	62	...	8	34	27	69
Okmulgee-Bristow	2	51	91	30	174	2	44	92	29	167
Tonkawa	4	5	71	13	93	4	5	76	13	98
Wewoka-Cromwell	17	51	243	52	363	20	53	242	47	362
Total Oklahoma	51	186	773	303	1313	62	178	787	294	1321
Kansas	66	80	230	127	503	66	80	230	127	503
North Texas										
Eastland County	..	3	17	7	27	...	2	17	6	25
Stephens County	..	12	33	34	89	...	13	37	29	79
Texas Panhandle	..	11	31	8	50	...	9	32	10	51
Mexia District	..	100	51	15	166	...	60	20	5	85
E. Texas Wildcats	..	15	5	61	81	...	28	12	39	79
W. Texas Wildcats	..	27	70	63	160	...	26	74	59	159
Wichita Falls	..	60	130	41	231	...	62	137	43	242
Total N. Texas	..	228	337	229	794	...	200	329	191	720
GRAND TOTAL	117	494	1340	659	2610	128	458	1346	612	2544

Completions In Oklahoma And Kansas Week Ending December 13

OKLAHOMA

Carter County

Company	Well No.	Location	Depth	Init. Prod.
Noble-Gault	1	C SW SE NE 28-1S-3W	3370–3397	400
Tidal	2	C NE SW NE 28-1S-3W	3372–3385	140
Humble	2	C NW NW NE 33-1-3W	3082–3100	190
Rockland	8	C SW SE NW 35-2S-3W	2242–2270	50
Amerada	2	SWc NW SW NE 28-5S-1E	1111–1123	140

Coal County

Company	Well No.	Location	Depth	Init. Prod.
Bearman et al	1	SWc NW NE 34-2N-9E	T. D. 2930	Dry

Creek County

Company	Well No.	Location	Depth	Init. Prod.
S. J. Smith	1	CEL-W½ 3-17N-11E	1805–1812	3½M
Joemack	4	SWc SE SE 9-16N-9E	T. D. 3010	Dry
Prairie	1	NWc SE 24-14N-9E	T. D. 3585	Dry

Hughes County—Papoose

Company	Well No.	Location	Depth	Init. Prod.
Slick et al	1	C NW NW NW 2-9N-9E	3295–3317	3000
T. B. Slick	2	C NE NE NE 3-9-9E	3300–3322	1922
Papoose	6	C SW NE SE 4-9-9E OWD	T. D. 3450	Dry

Jefferson County

Company	Well No.	Location	Depth	Init. Prod.
Johnson	1	NEc NW 9-4S-4W	T. D. 3093	Dry
Lugg et al	1	C SE NW SE 3-7S-7W	T. D. 2721	Dry

Kay County—Braman

Company	Well No.	Location	Depth	Init. Prod.
Comar	1	C SE SE NW 21-29N-1W	2058–2074	830

Kay County—Tonkawa

Company	Well No.	Location	Depth	Init. Prod.
Amerada	35	C NW SW NE 34-25N-1W	4050–4115	1320
Comar	8-W	C NE NE SE 34-29-1W	3955–4000	803
Comar	4-W	C NE SE NW 34-29-1W	4101–4188	2816
Comar	47	C NW NE SW 34-25N-1W	3208–4261	4491

Lincoln County

Company	Well No.	Location	Depth	Init. Prod.
Indep	1	SEc NE SE 6-15N-6E	3770–3777	126

Marshall County

Company	Well No.	Location	Depth	Init. Prod.
Carpenter et al	2	SEc NW NE NE 36-5S-5E	T. D. 600	Dry

Muskogee County

Company	Well No.	Location	Depth	Init. Prod.
Hazlett	2	SWc NE 27-14N-15E	T. D. 1919	Dry
Straughn	3	CWL NW NW 7-15N-16E	T. D. 1480	Dry

Noble County—Tonkawa

Company	Well No.	Location	Depth	Init. Prod.
Gypsy	43	C SW SW NW 2-24N-1W O.W.D.	4082-4116	3530

Noble County

Company	Well No.	Location	Depth	Init. Prod.
Mid-Co.	11-A	SEc NW SE NW 29-24-1W	2001-2026	5

Okfuskee County

Company	Well No.	Location	Depth	Init. Prod.
Josey	1	SEc NE 32-12N-11E	2876–2904	225
Anglo Tex	1	C NW NE NW 4-11-11E	3040-3050	2M

Okfuskee County—Papoose

Company	Well No.	Location	Depth	Init. Prod.
I. T. I. O.	2	C SE SE SE 34-10N-9E	3307–3322	1920
Gypsy	1	C SE SW SE 34-10-9	3289–3312	1885
Kingwood	1	C SE SE SW 35-10-9E	3310–3345	218
Kingwood	2	SWc SW SW 35-10-9	3306–3314	2840

Okmulgee County

Company	Well No.	Location	Depth	Init. Prod.
Sheldon et al	1	C NE SE NW 34-16N-12E	2174–2180	288
Amerada	1	NEc SE 32-13N-12E	2290–2309	12M
Rickaw et al	2	NEc SE NW 26-15N-11E	T. D. 2900	Dry
Lambert	7	C SE NE NE 7-13N-15E	713–736	¾M
Sommerville	2	CEL NE NW 28-14N-14E	1135–1165	50
Hazlett	1	CEL NE NE 23-13N-14E	T. D. 2055	Dry
Lowry	13	CSL NW NE 26-13N-14E	T. D. 2335	Dry
Elm	11	CEL NE SW 13-14N-14E	T. D. 1539	Dry
Wander-Ritch	6	CWL NW SE 13-14-14E	T. D. 1091	Dry

Osage County

Company	Well No.	Location	Depth	Init. Prod.
Phillips	2	NE SE NE SE 10-21N-9E	2268-2300	75
Titus et al	3	NEc 23-21N-10E	2540–2546	40
Mid-Kansas	3	SW NW SW SW 21-25N-8E	2684–2689	15
Beacon	2	C SW NW SE 27-29N-11E	960– 990	60
C. K. Dresser	1	CWL E½ W½ SW 5-23N-11E	T. D. 1640	Dry
Owen Osage	306	SW NE SE 5-23N-11E	T. D. 1870	Dry
Marland	4	NE NW NE SW 15-24N-8E	T. D. 150	Dry
Henderson et al	5	NW NE SE 10-25N-8E	T. D. 2402	Dry
I. T. I. O.	1	SE SW NW 34-29N-11E	T. D. 2339	Dry

Osage-Burbank

Company	Well No.	Location	Depth	Init. Prod.
Carter	11	C NE SE NW 11-27N-5E	2985–3047	700

Pawnee County

Company	Well No.	Location	Depth	Init. Prod.
Steen et al	3	NEc SE 17-20N-7E	2663–2695	280
Josey	4	SWc 36-19-5E	3455-3488	216
Deep Rock	1	C NW SE 23-18N-3E	1717–1741	18M

Payne County

Company	Well No.	Location	Depth	Init. Prod.
Carter	2	NEc NW SE 17-19N-6E	T. D. 3709	Dry

Pontotoc County

Company	Well No.	Location	Depth	Init. Prod.
Haney et al	1	SWc 34-3N-4E	T. D. 866	Dry

Seminole County—Cromwell

Company	Well No.	Location	Depth	Init. Prod.
Sinclair	1	CSW NW NE 4-10N-8E	3369–3439	1933
Pure	7	C SE NE SE 9-10-8E	3390–3480	280
Pure	10	C NW NE SE 9-10-8	3357–3440	67
Pure	11	C SW NW SE 9-10-8E	3360–3416	72
Transcontinental et al	7	C SW NW SW 9-10-8	3435–3473	1600
Gypsy	2	C NE SE NE 9-10-8	3356-3465	120 & 10M
Amerada	2	C SW SW NW 9-10-8	3415–3461	1574
Carter	1	C NW SW NE 10-10-8	3340–3492	80M
Superior	4	C SW NE NW 16-10-8	3419–3469	400
Superior	5	CNW SE NW 16-10-8	3445–3490	360

Seminole County—Wewoka

Company	Well No.	Location	Depth	Init. Prod.
Magnolia	4	C NW SE NW 32-8N-8E	3231–3238	85

Sequoyah County

Company	Well No.	Location	Depth	Init. Prod.
Industrial	1	SWc SE SW 8-10N-26E	T. D. 3110	Dry
Eureka	1	NWc NE NW SE 23-11-25E	T. E. 3045	Dry

Stephens County

Company	Well No.	Location	Depth	Init. Prod.
Lone Star Gas	5-A	NEc NE SE 24-1S-9W	2058-2080	8M
Calhoma	1	NWc SW NE SW 18-1S-8W	1895–1900	¾M

Tulsa County

Company	Well No.	Location	Depth	Init. Prod.
Echo	1	SWc NE SW 5-19N-12E	1930–1945	50
Broken Arrow Gas	1	SEc SE NE 15-18N-14E	1312-1318	½M
S. S. Home	1	NEc SW NW 14-19N-11E	T. D. 2230	Dry
S. S. Home	1	CWL NW SW 7-19-12E	T. D. 2156	Dry

Wagoner County

Company	Well No.	Location	Depth	Init. Prod.
Bankers	3	C SW NW 18-17N-15E	1819-1826	50
Carder	1	SWc SE NE 25-18-15E	1474–1487	50
Betz	2	SEc NW 34-17-18E	T. D. 475	Dry

KANSAS

Barton County

Company	Well No.	Location	Depth	Init. Prod.
Jasper-Beschka	1	SEc 11-16-12W	T. D. 3519	Dry

Butler County

Company	Well No.	Location	Depth	Init. Prod.
Braden Bros. et al	2	NWc SE SW 17-27-7E	T. D. 2725	Dry

Cowley County

Company	Well No.	Location	Depth	Init. Prod.
Casseday	5	C NW NW 14-30-4E	2783–2811	25
Titus	3	NWc SE SE 31-30-6E	2878–2897	100
Kano-Tex	1	SEc SW 17-34-4E	657–665	¼M
Nathon et al	2	NWc NE NW 20-34-4E	659–664	½M
Lewis	1	SWc SE 30-30-6	T. D. 2934	Dry
Southwestern	1	NEc 13-31-5E	T. D. 3009	Dry
Watchorn	1	NWc NE NE 36-32-4E	T. D. 3750	Dry
Reynolds et al	1	SWc 4-33-6E O. W. D.	T. D. 3154	Dry

Elk County

Company	Well No.	Location	Depth	Init. Prod.
Nye	1	NEc SW NE 8-29-9E	T. D. 2338	Dry
Wilson-Phillips	1	SWc NE SW 27-29-9E	T. D. 2616	Dry

Greenwood County

Company	Well No.	Location	Depth	Init. Prod.
Derby-Polhamus	1	SEc SW 36-23-9E	T. D. 2382	Dry

Marion County

Company	Well No.	Location	Depth	Init. Prod.
Watchorn	38	SEc SW NE 5-22-4E	2484–2469	50

Reno County

Company	Well No.	Location	Depth	Init. Prod.
Jennings et al	1	SEc SW SW 2-25-6W	T. D. 3579	Dry

Tools Are Recovered From World's Deepest Producing Well

Staff Special

PITTSBURGH, Dec. 15.

AFTER a fishing job of two weeks duration, the tools in the world's deepest producing well have been recovered and the hole is now clear. This well, which is located two and a half miles west of Ligonier, Westmoreland county, Pa., was drilled by the People's Natural Gas Co. and is the second deep gas well to be completed in that immediate territory. The first one, however, was not so deep and found production in a different sand.

The first well drilled in this area by the People's was located on the Booth & Flinn tract between Ligonier and Latrobe, Pa., on Chestnut Ridge anticline. Drilling was started on March 12, 1919, and gas was found in the Oriskany sandstone at a depth of 6822 feet. The open flow was about 550,000 cubic feet with an estimated rock pressure of 3600 pounds. Some tubing and a string of tools were lost in the hole in March, 1920, but in spite of these obstacles the well has produced ever since, although its flow has decreased materially and now amounts to about 160,000 feet daily.

The company then started two additional wells, one of them being located 4200 feet northwest and the other 500 feet due east. The one northwest was drilled to total depth of 6980 feet and failed to find the sand which the first one found. After working on this one for four years, it has been given up.

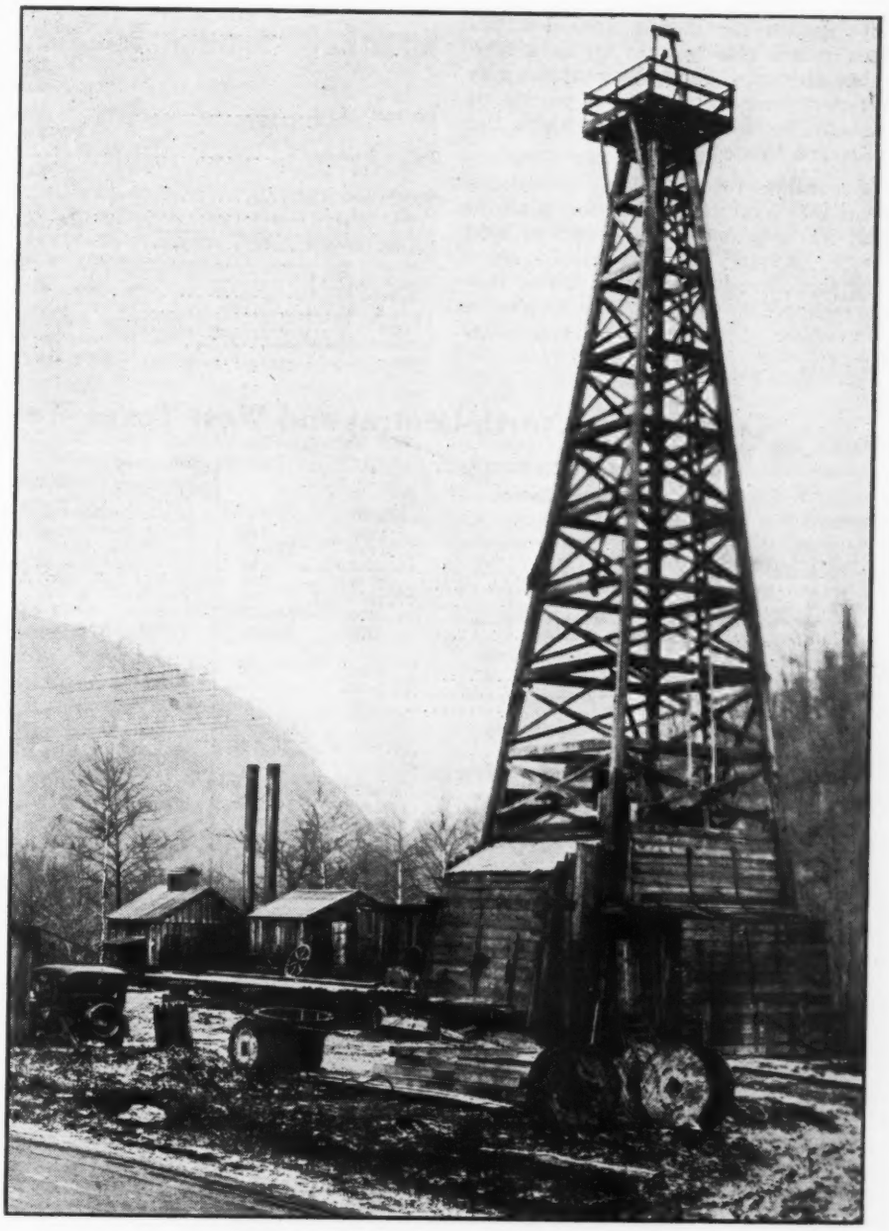
The well located 500 feet east of the discovery is the one which recently found the deep gas. Its total depth is 7430 feet. It is not the deepest test ever drilled, this distinction belonging to the I. H. Lake well, located in Marion county, W. Va., which was drilled by the Hope Natural Gas Co. Its total footage was 7579 feet.

The new gas horizon in the deep well, which is the No. 2 on Booth & Flinn land, is pronounced to be the Stormville or Coeymans sand. It found the Oriskany sand, which was productive in No. 1, and this formation had a thickness of 260 feet, but it was so tight that it appeared improbable that it could serve as a gas reservoir bed at this location. It was, therefore, drilled on down and finished in 4-inch hole. Its production was about 400,000 feet open flow. In spite of this small volume, the pressure was great enough to throw the light tools up 200 feet in the hole, which led to the fishing job.

The test was started on April 5, 1922. It was cased to 6800 feet with 5 3/16 inch, 24-pound casing, welded.

Temperature tests were taken at intervals by the U. S. Geological Survey. At 1000 feet the temperature was 63 degrees, 78 at 2000 feet, 93 at 3000 feet, 107.8 at 4000 feet, 127.4 at 5000 feet, 148 at 6000 feet, 158 at 6500 feet and 166.1 at 6760 feet, which was the last reading taken.

Oil producers are familiar with the term "hard sand," but it is doubtful whether many of them have encountered sand as hard as the Oriskany was found to be in the No. 2 well. Samples brought to the surface would cut glass and the life of a bit working on this formation was about 25 minutes. A foot a day was considered good time in the lower part of this sandstone.



Well No. 2 on Booth & Flinn property, the deepest producing well. This is located on the Lincoln Highway, west of Ligonier, Pa.

Officials Visit Louisiana

SHREVEPORT, Dec. 11.—A party of officials of the Standard Oil Co. of Indiana, which controls the Dixie Oil Co., left tonight for Chicago after having spent today in the north Caddo and Waskom fields, en route from the convention in Fort Worth. The party included: Col. Robert W. Stewart, chairman of the board of directors; E. G. Seubert, vice president and secretary-treasurer; Allan Jackson, vice president; R. H. McElroy, director of traffic; Edward J. Bullock, director of purchases; and George M. Cook, chairman of public relations.

TULSA, Dec. 13.—W. C. Adams is now in full charge of geological work for the Shaffer Oil & Refining Co., following retirement from the company of J. Elmer Thomas, of Chicago.

West Coast Co. To Drill Test Near Beverly Hills

By Special Correspondent

LOS ANGELES, Dec. 11.—One of the oldest oil fields in the vicinity of Los Angeles took on a new twist when it was announced that the West Coast Oil Co., a subsidiary of the Associated Oil Co., intends to drill a deep test hole on the old Wolfskill lease, near Beverly Hills.

The field in question is an extension of the old Los Angeles-Salt Lake field, and has been producing since 1909 when it was developed by the old Pacific Petroleum Corp., now extinct. During that period of time the field, although the structure only embraces about 200 acres, has yielded 3,500,000 barrels of crude, according to reports.

It is still producing a total of about 1000 barrels per day from 15 pumpers, all of which were drilled to depths of about 2500 feet. Since the field's early development the district around it has been rather closely built up as a residence district, the subdivision known as Westwood now occupying a portion of the old Wolfskill ranch on which the wells are located.

According to yesterday's announcement the West Coast company plans to drill its deep test as far down as 5000 feet if necessary in order to pick up a new sand, but its geologists assert that they expect to locate a new formation somewhere between 3500 and 4000 feet.

Gulf Coastal, Texas Completions, Week Ended December 13

Company	Lease—Well	Field	Depth	Prod.
Gulf Production Co.	Mose Granger 1	Orange	4500	2500
The Texas Co.	Hogg 66	West Columbia	3165	300*
Humble Oil & Refining Co.	Jones-State 5	Goose Creek	2850	45*
Gulf Production Co.	Hirsch-State 4	Goose Creek	4392	100
Gulf Production Co.	Wright 6	Goose Creek	1600	50
Gulf Production Co.	Scarborough 13	Hull	3550	125
Gulf Refining Co. of La.	Star-Vincent 33	Vinton, La.	2325	20
Gulf Refining Co. of La.	Jennings-Clement 25	Evangeline, La.	2330	100
The Texas Co.	Latrielle 49	Evangeline, La.	1870	Aband.

*—Pumping.

Completions in North Louisiana and Arkansas Week Ended Dec. 11

LOUISIANA

Caddo Parish—Waskom

Company	Well	Location	Depth	Yield
State Line O. & G. Co.	Mays Bros. No. 1	17–17–16	940	30 m gas
Waterman D. & Dev. Co.	Bryson No. 1	18–17–16	925	10 m gas
Waterman D. & Dev. Co.	Waterman No. 2	18–17–16	1916	15 m gas

Bossier Parish—Elm Grove

J. F. Palmer	McAnn No. 4	31–16–11	1910	3 m gas

Morehouse Parish

LaDel et al.	White No. 3	33–20–5	2235	15 m gas
Natural Gas & Pet. Co.	Grayling No. 2	8–21–4E	2115	10 m gas

Ouachita Parish

La Del et al.	Fee No. 31	20–19–5E	2230	10 m gas

TEXAS

Harrison County—Waskom

Howze et al.	Bryson B-1	W. R. Anderson HRS.	964	20 m gas
H. S. Morris, trustee	Hickman No. 1	E. Pollock HRS.	935	10 m gas
Proven Production Co.	Abney No. 1	T. D. Wilson HRS.	1952	35 m gas

Panol County

Magnolia Pet. Co.	Nelse Ford No. 1	L. R. Booker HRS.	1950	8 m gas
Magnolia Pet. Co.	Sol Oden No. 1	Mitcheson HRS.	1965	5 m gas

ARKANSAS

Nevada County

Prescott Oil Co.	Henry No. 3	10–12–20	1000	dry aband.

Hempstead County

Falcon Drilling Co.	Ford No. 1	31–14–23	2520	dry aband.

Smackover

H. E. Clark et al.	Smith No. 1	26–15–17	2395	60
Hunt et al.	Anderson A-3	23–15–17	2305	80
Texas Oil Co.	J. D. Reynolds No. 1	23–15–17	2295	130
Forrest Oil Co.	Mullin No. 4	28–15–16	2000	10
Hurley et al.	Shirey-Berg No. 4	28–15–16	2300	75
Magnolia Pet. Co.	W. F. Patton No. 3	31–15–16	2082	70
Magnolia Pet. Co.	N. Patton No. 4	32–15–16	2260	60
P. A. Wall	La Grone No. 1	30–15–16	2270	junk. aband.
Baggot et al.	Clark No. 1	21–16–15	2060	100
Kinnebrew et al.	Williams No. 4	3–16–15	1992	100
Estes et al.	Freeman No. 4	1–16–17	2263	50

Completions North-Central and West Texas Week Ending December 13

WICHITA FALLS DISTRICT

Wichita County

Company	Well No.	Lease	Depth	Prod.
Texahoma-Perkins	2-b	Burnett	1820	150
L. J. K. Oil Company	1	Henson	1740	Aband.
Perkins & Cullum	11	Burnett	1595	130
Drillers Dev. Company	5	Douglas	1050	15
Parker Bros.	1	Lowe	1815	20
J. K. Brewer	1	Hanson	2130	Aband.
J. L. Elliot	2	G. Jennings	2000	Aband.

Wilbarger County

Winnipeg Oil Co.	3	Bond et al.	2035	450
Bridwell & Heydrick	4	Stephens	2040	1400
Petroleum Producers	2	Dill	2040	125

Baylor County

Crittendon et al.	1	Hawkins	2035	Aband.

Archer County—North

Roy I Carter et al.	3-c	J. H. White	1610	junked
Roy I Carter et al.	15-E	J. H. White	1400	junked
C. B. Long et al.	1	Kemp & Kempner	1940	Aband.
George S. Anderson	2	E. M. Hughes	625	Aband.
Wirt Franklin	1-b	Parrish	1550	100
Barkley and Meadows	5	L. F. Wilson	1640	Aband.
John Lane et al.	4	J. H. White	1615	50
Magnolia Petroleum	8	W. F. Parrish	1600	130
Ross Robertson et al.	5	J. H. White	1600	240
Humphries et al.	1	J. H. White	1600	200
Oil Investment Co.	2	Fee	1100	150

Archer County-South

Grisham & Parks	4	Davis	1090	210
Harvey et al.	1	Kunkel	1500	Aband.
Consolidated Oil Co.	2-e	Ragle	1095	320
Hardesty et al.	1	Hausler	1200	Aband.
Cullum & Perkins	4	Birdwell	1150	Aband.
Harris et al.	1	Stampffi	1360	225
Gwynn et al.	2	M. E. Rogers	1290	210
Humble Oil & Refng.	2	Ragle	1100	30
Humble Oil & Refng.	1	Hausler	1140	Aband.
Magnolia Petroleum	1	J. H. Roberson	2330	Aband.
Murchison & Fain	2-c	Harmel	1280	210
Murchison & Fain	3-c	Harmel	1285	150
Murchison & Fain	4-c	Harmel	1275	210
Murchison & Fain	2-a	Harmel	1295	280
Murchison & Fain	3	Griffin	1295	175
Murchison & Fain	5	Griffin	1330	Aband.
Maer & Staniforth	4	Birdwell	1200	Aband.
Maer & Staniforth	5	Birdwell	1135	100
Petroleum Producers	2	Birdwell	1125	400
Melat & Graham	4	Goldsmith	1360	100
Ray & Featherstone	3	Hausler	1130	260
Ray & Featherstone	5	Hausler	1130	310
Sun Oil Company	3	Green	1080	230
Texahoma Oil & Refng.	6	Hausler	1400	Aband.
Wollett & Murphy	1	Griffin	1300	175
The Texas Co.	2	Jeske	1420	Aband.
Underwood Drilling Co.	2	Rogers	1295	60
Sanders-Taylor	3	J. L. Logan	1300	Aband.

Montague County

The Texas Co.	2-a	Gist	925	130
Texahoma Oil & Refng.	1	Cato	2560	Aband.

GENERAL RANGER TERRITORY

Young County

Murchison & Fain & Litchfield	1	Campbell	1050	40
Herbert Drilling Co.	1	Johnson	2920	Aband.
Simms Oil Co.	1	Willis	3970	180

Throckmorton County

Larkin et al.	1	Richards	750	2 mi. ft. gas

Palo Pinto County

Dittman et al.	1	Bigler	3685	2 mi. ft. gas
Broderick & Calvert	1	Moseley	4005	Aband.

Stephens County

Mook Texas Oil Co.	2	Head	2130	60
Hoffer Oil Corpn.	1	Webb	3780	Aband.
Pender Prodn. Co.	1	Hart	3300	110
Swensondale Oil Company.	1	Echols	3280	20

Eastland County

Beeler et al.	1	Huestis	1010	Aband.
Magnolia Petroleum Co.	6	P. O. Harris	1430	150
Williamson et al.	4	Fox	1180	15

EAST-CENTRAL TEXAS

Wortham County

John Hooser	1	Stubbs	3155	Aband.
Kirby Oil Co.	1	Bounds	2986	10,000

Richland County

McIntyre et al.	1	Richards	3600	Aband.

Powell County

Garland Kent	1	Barry	1660	10
Cranfill, Reynolds et al.	1	Irving	1860	Aband.

Standard Pays Big Tax In Louisiana

SHREVEPORT, Dec. 11.—For each hour that the Standard Oil Co. operates in Louisiana during the next year it will pay $66.15 in taxes to the tax collector of East Baton Rouge parish, according to advices from the state capital.

The figure is said to be based on a twenty-four hour day. The Standard is the largest taxpayer in Louisiana. Its assessment is nearly $41,000,000, the report from Baton Rouge says, or 25 per cent more than the entire city of Baton Rouge. Its tax bill in East Baton Rouge parish amounts to $579,604.43, which amounts to $1.10 per minute.

These figures include only state, parish and district taxes paid in East Baton Rouge and not the taxes on their property in other parts of the state, including Caddo and neighboring parishes, where the Standard is among the large operators.

Gypsy Will Resume On Ute Test

DENVER, Dec. 13.—Drilling operations in northwestern New Mexico disclose no unusual features for the week. The Gypsy Oil Co. has re-cemented its test on 16-32-14 Ute structure just south of the Colorado line at 2828 feet and is ready to resume drilling. The company was very anxious to complete this well before cold weather set in but was delayed on account of the first cementing job not being a success. As a result the water line froze up and broke and the company is now hauling water in tank wagons for a distance of nine miles. It has approximately 300 feet to go and will endeavor to complete the operation this year.

The Union Oil Co. of California has reached a depth of 3295 feet on the Vermejo dome in Colfax county just south of the Colorado line, at which depth it is shutting off water coming from a sand 10 feet thick. This sand is believed to be either a stray or the Frontier. If it is the latter, it will probably have 350 to 400 feet to go in order to reach the Dakota, the objective horizon. It is understood, however, that the company is not very hopeful, as the hole is reported to be showing considerable temperature which makes it unlikely that any oil will be found. This structure is one of the largest that has been located in New Mexico and embraces something like 19,000 acres within the 14001-boot closing contour line.

The New Mexico & Arizona Land Co., an offshoot of the Frisco System, has several hundred thousand acres of land in northwestern New Mexico and northeastern Arizona which it has been anxious to have tested for oil. Last summer it gave an option to the Texas & Pacific Coal & Oil Co. on a consideration block of land in San Juan and McKinley counties. It is understood that the contract called for the immediate drilling of at least ten wells. Texas & Pacific is reported to have finished its geological work and to have found several structures quite promising but is unwilling to undertake the drilling of the required number of wells and a new contract is said to be now under consideration. The Standard Oil Co. of California also was granted an option on a number of tracts in that territory and was given until Jan. 15, 1925, to make its examinations and to select 10,000 acres for prospecting. It has not yet completed this work and it is not known what decision will be made.

Will Build Refinery At Farmington

DENVER, Dec. 13.—The Mutual Oil Co. and the Navajo Co. reached an agreement for the location of their new refinery at Farmington in San Juan county at the south terminal of the narrow gauge line of the Denver & Rio Grande Western Railroad and 30 miles east of the Rattlesnake dome, from which it will obtain its crude oil supply.

Construction work will start at once and it is expected that the refinery will be in operation by April 1, and arrangements have been made between the Mutual Co. and the Midwest Refinery Co. whereby the Midwest 3-inch welded pipe line from the Hogback dome to Farmington will be used for part of the transportation system. The Hogback dome lies between the Rattlesnake dome and Farmington and it will require about 10 miles of new pipe line to make the connection. The Hogback line has a capacity of 3000 to 4000 barrels per day. The Midwest is shipping about 500 barrels from the Hogback and the Mutual requirements will be around 250 barrels a day so the line will be ample for present needs and the arrangement will prevent duplicate construction for a distance of about twenty miles. The production will be marketed in southwestern Colorado and northeastern New Mexico in the territory served by the Denver & Rio Grande Western narrow gauge lines through the Continental Oil Co., a Mutual subsidiary. The Mutual Company will be in charge of the operation of the refinery as well as the drilling on the Rattlesnake dome, though both will be owned jointly by that company and the Navajo Co. S. C. Munoz of New York, president of the New Mexico Central Railroad is the leading spirit in the Navajo Co.

Marland Has Big Contracts

NEW YORK, Dec. 16.—President E. W. Marland in giving the outlook for his company in 1925 stated it had arranged contracts for delivery of 18,000,000 barrels of crude in 1925 and would probably increase that amount to 25,000,000. He said the Marland net production early in December was 32,000 barrels daily.

Wortham Hits 20,000 Mark With 4 Wells

Staff Special

HOUSTON, Dec. 16.—E. L. Smith Oil Co.'s No. 1 well on the south edge of the Wortham townsite came in Monday and made 47000 barrels in 14 hours at Woodbine sand level. Pipelines were taking 26,000 barrels from four earlier completions in the field when the Smith well came in an average of about one completion a day may be expected at Wortham until Christmas, the field probably reaching 100,000 barrels daily average before Jan. 1.

The fourth producing oil well in the new Wortham field was completed late Saturday when R. R. Penn and others brought in No. 1 McCorkle flowing 380 barrels the first hour at a total depth of 3015 feet. Differences in both the surface and the sub-sea elevations were responsible for the greater depth of the Penn well than those elsewhere in the field.

The Penn well is located north-northeast of the earlier Simmons well of the Boyd Oil Corp., which is still being produced at more than 7500 barrels daily two and a half weeks after drilling in. The Penn is 5000 feet in a more northeasterly direction from the No. 1 Beale of the Kirby Petroleum Co., which was completed Wednesday of last week at a total depth of 2984 feet, making 650 barrels the first hour. The Kirby is due north of the Simmons about a half mile and is within 500 feet of the Wortham townsite.

These wells are being pinched down in production practice from their open flow possibilities to protect against the pulling into the sand too quickly of the water table that backs up oil accumulation down the east-southeast side of the narrow structure. This condition taken into account, the Kirby well is rated at roundly 8000 to 9000 barrels daily production and the Penn well at 6000 to 7000 barrels.

Both these wells were forecast in the Dec. 10 issue of National Petroleum News as certain to be good wells.

The Wortham field now extends about three miles from the Boyd Oil Corp.'s discovery well on the Boyd tract in a northeasterly direction to the Penn well and will be somewhat further extended to the northeast by future drilling. Its indicated breadth at the widest point will be somewhere between 2000 and 3000 feet.

After having reached daily average production last week in excess of 16,000 barrels because of the Kirby well completion, the Wortham field opens the new week pouring out more than 20,000 barrels daily from four wells. Other completions immediately due will further swell flush production before the holidays.

Plan For Greater Activity In Work Of Petroleum Safety Council

Staff Special.

FORT WORTH, Dec. 11. CONSIDERABLE expansion of activity in safety work during the coming year is contemplated in plans now being carried out by the Petroleum Safety Council of the Mid-Continent Oil & Gas association. It is planned to centralize the work through employment of a safety engineer, who will work directly with the officers of the association, and through him a greatly broadened scope of activity will be deeloped. The plans also include employment of a motion picture director and a field traveling agent. Through them the Council will make and distribute its own safety educational pictures, and will keep in close touch with field work and conditions at all times.

These plans, together with a budget containing an estimate of expense necessary for 1925 and methods of raising the necessary amount, are contained in a tentative plan presented today to the executive committee of the association by Henry W. Boggess, of the Sinclair Consolidated Oil Corp., Tulsa, who has been prominently identified with the safety movement since it was initiated in the Mid-Continent field, Mr. Boggess' plan for re-organization of the council was approved by the committee, contingent upon ability of its directors to make necessary financial arrangements.

It is estimated in the report that $36,000 will be necessary to carry on the safety work during 1925, under new plans outlined. This compares with an income from all sources during 1924 of $26,006.40, of which $14,506.40 was paid in by subscribing companies and $11,500 was in the form of donations from various companies. The amount paid in by subscribers represented 100 companies reporting 37,000 employes, the dues having been at the rate of 40 cents per employe.

For 1925, it is planned to raise the dues to 60 cents for each employe. It is believed that the council can be expected to increase its membership to at least 60,000 reported employes as the 37,000 now included were obtained with comparatively little effort to increase the membership. The report calls attention to the fact that the proposed fee amounts to only five cents per month for each employe, which is comparatively insignificant when the magnitude of the council's work and its effectiveness are considered. The plan provides for payment of dues in semi-annual installments.

Among recommended activities of the Safety Council during the year are filming, developing, and showing of at least three separate motion pictures for the benefit of field employes, creating, publishing and distributing monthly bulleletins among subscribing companies, establishment of a recommended form for uniform reporting of accident statistics, and compilation of such reports to determine causes of accident in oil work. Perpetual research work also is planned with a view of recommending standardized safety devices, appliances and tools. It is planned to assist as much as possible in standardization of accident report forms of the different states, to facilitate statistical work.

Employment of a safety engineer at a salary of $6,000 per annum is contemplated in the re-organization plan. A motion picture director at a salary of $2,500 and a traveling agent at $2,400, also are provided for. Production of three 3-reel films is estimated at $10,000, which is the largest single item in the budget. For holding a Safety Day and field meet at the International Petrolum Exposition. $1,500 is appropriated, while a similar amount is set aside for bulletin and "still" picture service. The remainder of the $36,000 budget consists of traveling and office expense, secretary's salary, and reserve.

In giving some reasons why the petroleum industry should unite to further the cause of safety through an organization working for the interest of the industry as a whole, Mr. Boggess' report says, in part:

"The petroleum industry is today numbered among the few industries that do not have consolidated accident and mortality statistics. Unless such statistics are soon made available, and by virtue of them, the causes of our accidents alleviated, it seems inevitable that the industry will be faced with drastic laws that will probably unfairly burden it in a financial way. These consolidated statistics can be gathered only by an organization operating for the industry as a whole, and the Petroleum Safety Council is in a position to gather and compile them more consistently and more efficiently than is any other organization.

"There seems to be a decided trend toward legislation of employes' workshops and fields as regards the safety of employes. This legislation began in California and has now spread into Oklahoma and Kansas. Such legislation, unless carefully guarded, may greatly hamper the resources of the industry. An organization such as the Safety Council would be in a position to experiment upon such laws on behalf of the industry, and as a result, to eliminate no small number of wholly inefficient measures.

"An example of the Council's activities along such lines is shown in the case of Oklahoma where the labor commissioner of that state recently promulgated tentative safety orders, many of which orders were drastic and of such a nature that they would have placed an undue financial burden upon the industry. The Safety Council in this instance succeeded in revising these regulations so that if they were to be adopted as they now stand, the industry would be forced to comply with 58 orders, whereas the original draft by the labor commissioner contained 116."

Abandon Old Wells

By Special Correspondent

LOS ANGELES, Dec. 11.—The Southern California Edison Co., one of the biggest electric power concerns in California, has just abandoned 42 old wells in the old Los Angeles-Salt Lake field, lying between Third street and Beverly boulevard in Los Angeles.

These wells occupied a 90-acre lease which was recently sold to sub-dividers who are now grading it and putting it in shape for hundreds of attractive bungalows which will be sold on the "like rent" plan. The old derricks are being torn down as fast as workmen can take them apart.

The wells in question represent a part of the large group that was drilled upwards of 20 years ago by the Southern California Edison Co., in order to provide itself with fuel oil with which to make the steam that generated its electric energy in and around Los Angeles.

At one time the company supplied more than half of the electricity used in Los Angeles, and served more than 20 neighboring cities. In recent years it had developed several enormous hydroelectric power plants in the Kern river country, above Bakersfield, and is now so well equipped for the development of hydroelectric energy that it used only a few steam plants as auxiliaries at times when storms in the mountains damaged its hydroelectric system.

Reports from the old Los Angeles-Salt Lake field are to the effect that the wells there which still number several hundred, are yielding from 10 to 100 barrels per day, although they have been on production for more than 30 years. The best well in the field is said to be yielding 150 barrels per day.

Sinclair Closes Tulsa Buying Office

TULSA, Dec. 13.—Tulsa buying offices for the Sinclair Refining Co. will be closed on Jan. 1, it was announced here this week. Export purchasing of the company will be done through the Dallas offices which are in charge of W. A. Tracy.

S. R. Scivally, who has been in charge of the Tulsa buying offices for a number of years before Sinclair absorbed the old Union Petroleum Co., has not announced as yet what his new connection will be. He is understood to be considering two positions which have been offered him.

Testing Of Deep Sands In Salt Creek Outstanding Feature Of Wyoming

DENVER, Dec. 13.

By Special Correspondent

THE deep tests drilling in Salt Creek form the center of interest in Wyoming operations this week. This is due principally to the effect the results will have on economic conditions of the principal companies holding leases in that field and the further assurance of a reserve supply of crude for the Casper refineries.

The Midwest Refining Co.'s No. 33X on the NW¼ of 35-40-79, which blew in as a gasser at 2262 feet on top of the Dakota sand last week has not yet drilled into the sand. Present operations are confined to efforts to mud off the gas so that drilling may continue. There is considerable oil coming out of the hole with the gas and forming a spray but whether this oil is coming from the gas horizon or from the upper formations is not quite certain. The hole made oil almost all the way down from the top.

This well is the last of three tests started by the Midwest to test out the horizons below the Wall Creek sands from which the field is now producing. The first well was drilled into the Dakota about 2 years ago and made considerable water with the oil, this water apparently coming from a different horizon separated by only a shallow shale break which made it difficult to shut it off. The well is still making around 200 barels. This test is on Sec. 25.

The second test was located to the northwest on Sec. 23 and came in about 2 months ago with an initial production of approximately 6,000 barrels from the Lakota sand at 2534 to 2546 feet. The hoel made considerable water with the oil when the valve was opened to capacity but the water disappeared when the valve was partially closed. The intentions were to kill this well and continue it on down to the horizons below the Lakota but this has not yet been accomplished. The third test is located to the south of the second on Sec. 35. The three wells form a triangle and were so located as to test the area in which the first Wall Creek sand is productive.

The second test on Sec. 23 topped the Dakota at 2424 feet with bottom at 2432 feet and a shale break of 2 feet between 2428 and 2430 feet. It had a small showing of oil and gas but no water. The Lakota was topped at 2504 feet and was uniform down to 2530 feet when four feet of shale was passed through to 2435 feet. At that depth the bit entered a coarse, porous sand and the big oil was found at 2534 to 2546 feet when drilling was suspended with the hole still in the Lakota.

No. 33X, the third test two miles to the south on Sec. 35, is about 280 feet higher on the structure. It will be observed that the gas and oil it is now making is coming from the top of the Lakota which has not yet been entered. This sand was thin and unimportant in the well on Sec. 23 but holds out considerable promise in the well on Sec. 35. If it has thickened out and is a producer as at present indicated, it will add another producing horizon to that part of the field. Unless it exceeds expectations, the intentions are to go on down to the Lakota sand where the big production was found in the other wells.

The first Wall Creek sand area in Salt Creek embraces between 4,000 and 4,500 acres which now looks as if it is proven for production from the Lakota and possibly in some of the area from the Dakota. The second Wall Creek is productive over a much larger territory and embraces about 20,000 acres. Just how far out into the second sand territory the lower sands will be productive remains to be determined.

No. 33X blew in unexpectedly A control valve had been placed on the 8-inch casing and it had a capacity for resisting a pressure of 400 pounds to the square inch but the pressure was much greater and the valve burst injuring 4 or 5 men. The gas probably has a pressure of about 600 pounds to the square inch. It will probably be a week or two before the results of the test will be known.

Test Co.'s Deep Test

Five miles to the south of this well, on the SW¼ of NW¼ of 19-39-78, in the neck between the Salt Creek and Teapot domes, the Texas Co. and Kinney-Coastal Oil Co. are drilling a deep test which may throw some light on the extent of the producing area for the Dakota and Lakota sands. This well is down 3725 feet and on top of the Dakota sand where a water shutoff is being made. The hole has gone through a thin sand commonly called the Muddy, the first in the Dakota series. When the cementing job is finished and the hole cleaned, it will be drilled into the Dakota. If production is not found, it will be carried on down to the Lakota so there are still two chances for the well. If it should come in as a producer, it will indicate that about 20,000 acres within the area of the second Wall Creek sand may be productive. It is easy to see that the test is one of extreme importance, owing to its strategic location. It is 900 feet lower on the structure than No. 33X, 5 miles to the north. This well is much closer to the area in which some production has been found in a third Wall Creek sand than the three Midwest deep tests.

Oil Near Lovell

Considerable interest has been manifested in a wildcat being drilled by the California Co. on the NW¼ of 31-56-96, on the Lovell structure in Big Horn county, about 15 miles south of the Montana line. The company is a subsidiary of the Standard Oil Co. of California. The well was reported a 500-barrel producer but best information indicates that it will not make anywhere near that figure. At 2734 feet a considerable flow of gas was encountered. This was cased off and the oil was found at 2769 feet, the present depth of the hole. The oil is reported to be of 52 gravity and about 70 per cent gasoline content. The structure has been known for some time and is in an area where several domes have been developed as big gas producers.

Teapot dome production is holding fairly steady at around 2000 barrels a day. Up to recent weeks it has shown a small but steady decline. This is in part due to the suspension of operations following the appointment of receivers for the leases growing out of the Mammoth Oil Co.—Fall investigation. Two wells have been completed since the receivers were appointed and both of these were practically on top of the sand at the time. A total of 87 wells were drilled of which 62 are producing, 14 are shut in, 5 have been abandoned and 6 are standing partly completed. Trial for cancellation of the leases has been set for Jan. 6 and will take place at Cheyenne.

Producers & Refiners test on the Simpson Ridge dome in Carbon county, is down 6,100 feet, the deepest hole in Wyoming, and still in the shale which has persisted since passing through the Wall Creek at around 600 feet. It will keep on going as long as possible in hopes of picking up the Dakota sands. The same company is abandoning its Belle Springs operation in Carbon county. The test was located on 1-23-89. It picked up a

Completions Rocky Mountain District Week Ended December 6

Company	Well No.	Description	Depth	Production
WYOMING				
Salt Creek				
Western States Oil & Land	16A	5-39-78	....	25
Carter Oil Co	13 Prior	5-39-78	2515	40
Mutual Oil	8 White	32-40-78	2517	200
Belle Springs				
Producers & Refiners	1	1-23-89	3120	Aband.
Colorado				
Panuco Exploration	1	Near Graneros	930	Aband.

good showing of oil in the Wall Creek at 1990 feet which was shut off to continue to the Dakota series the last of which was tested at 3120 feet without results. The hole was plugged back to the showing but failed to make a producer. This structure held out considerable promise. The Ohio Oil Co. drilled a test several years ago but found nothing of value but indications were sufficiently favorable to warrant another test.

Mutual to Test Lakota

Mutual Oil Co. is drilling a test to the Lakota in Salt Creek on 2-39-79 on Boston-Wyoming lease. The hole is down 2000 feet and still has more than 1000 feet to go. The location is outside the producing area of the first Wall Creek but within the second Wall Creek producing territory. It is about a mile south of the Midwest No. 33X which is making gas and oil from the top of the Dakota.

Salt Creek, which has always faced a serious problem in a supply of water for domestic and drilling purposes, will soon have all the water it needs as a result of the approaching completion of the system of the Intermountain Water & Power Co. This company is utilizing a water well on the Tisdale dome, west of the field. This well flows about 133,000 barrels a day and the system will convey this water to reservoirs for cooling and then to the Salt Creek distribution system. The distribution plant, owned by the Midwest Refining Co., has been leased to the water company. The water comes out of the ground with a temperature of 112 degrees and at 190 pounds pressure.

Colorado

Winter has begun to get its grip on Colorado and as a result wildcat drilling operations are slowing down. Few new wells are being started and a number of drilling wells have been shut down until spring. Some of the deeper tests which are within striking distance of the objective horizons are being rushed in an effort to complete them before it becomes necessary to suspend work.

Operations along the Colorado-New Mexico boundary are also feeling the effect of winter. The Gypsy Oil Co. has been delayed by a frozen water line on its test just across the boundary and is having to haul water in tank wagons. The tests drilling in the plains region in eastern Colorado are mostly exposed where they can get the full benefit of winter blasts but most of them will keep going as long as possible. The one new test being started in the Plains region is that of the Roland Oil Co. near Watkins in Arapahoe county. It is in the preliminary stages and will not be ready to spud in for several weeks.

It was expected that a number of the more important tests would reach the objective horizons by Christmas but an unusually large number of fishing jobs is holding them back and it is now probable that few, if any, wells will be finished before the beginning of next year. The Texas Co. Meyer No. 1 on 9-4-91 Moffat dome in the Craig district is the only well on that structure which is now drilling. It only has about 240 feet to go and ordinarily would reach the sand by Christmas but the company will not be at all surprised if it is even February before it is finished. This is the key well on that structure which was described last week and it will furnish the index for future drilling operations.

The Texas Co.'s Adair No. 1 on 7-6-86, Tow Creek dome, in Routt county, northwestern Colorado, is developing into an especially interesting test. It has been striking gas pockets for some time and at 2151 feet had an accummulated flow of 12,000,000 cubic feet. The gas is coming from the shale and is not expected to hold up to the present volume. It will be brought to the surface between the 10-inch and 12-inch casings and run into a regulator so it can be used for fuel for camp and drilling purposes. It will solve the problem of winter operations and the company expects to continue without serious interruption until the sand is reached. The Tow Creek dome is a large and well-defined structure but has an ingneous intrusion at the north which makes the test an especially interesting operation.

White River Drilling

The White River Developing Co. has finished a long fishing job in an interesting test on 31-2N-96, White river dome, in Rio Blanco county, on the western slope, and is again drilling below 2,670 feet. This well started in the Wasatch formation of the Tertiary and is intended as a test of sands in the top of the Mesa Verde expected at around 3600 feet. It has an accummulated flow from several sands of around 14,000,000 cubic feet of gas. It has been delayed for several months due to a fishing job to recover several strings of casing dropped into the hole.. This is the second attempt of that company to make a test of the structure at that location. The first hole was lost after having found gas in the sands in the Wasatch and also some high gravity oil. It is about the only test in the state starting in the Tertiary.

The Carter Oil Co. test on 8-4-87, Sage Creek dome, in Routt county, is also making considerable gas from the shale above the objective horizon. The gas is sufficient in quantity to furnish fuel for the boilers. It is down 2410 feet and the casing is being pulled to get out several collapsed joints.

Roland is Down Deep

The Roland Oil Co. test on 34-2-69X, Longmont dome, is below 5900 feet and still going. It is expected to wind up at around 6500 feet if it fails to pick up a producing sand in the meantime but will not stop until its gets oil or runs out of hole. This well is the only well in northern Colorado drilled by electrically driven motors and has made a good record. It was spudded in on July 17 and is now the deepest well in the state. At a depth of 5500 feet, it required only 11 minutes to lift the tools to the surface. About the time this well was spudded in the same company started a test on the Calhan dome, east of Colorado Springs, with which it has had nothing but trouble and is at present fishing at a depth of only 1600 feet.

Only 3 wells, outside of the Union Oil Co. of California wells are now drilling in the Wellington-Fort Collins district, the others being shut down for one reason or another. One of the wells making depth is that of the Great Northern Oil, Inc., on 19-9-68. It is down 3260 feet and making rapid progress. It has had two good showings of oil the last at 2878 feet. It is located 4 miles south of the discovery well and 3 miles south of the Mitchell No. 1, which came in at practically the same depth and for the same quantity of gas as the discovery.

The Panuco Exploration Co. has abandoned its third well in the Pueblo district and has moved down into Huerfana county where it is starting a test on 10-21-69, near Las Animas. The Pueblo well was located southwest of the town near Granerous and stopped in the Morrison at 950 feet.

The outstanding wildcat operation in the state at the present time is the Sun Oil Co. test on 8-8S-102, Garmesa dome, Mesa county, 10 miles east of the Uah boundary. The well came in with a flow of 15,000,000 cubic feet of gas in the Frontier horizon at 2858 feet a few weeks ago. The flow increased to 60,000,000 cubic feet before it was shut in and the gas is extremely wet. It gives every indication of turning to oil if allowed to blow for a few days but the valve has been opened at intervals to relieve the pressure. The gas has been bradenheaded off between the 8 and 10-inch casings and as soon as a 6-inch string can be run, it will be deepened to the Dakota.

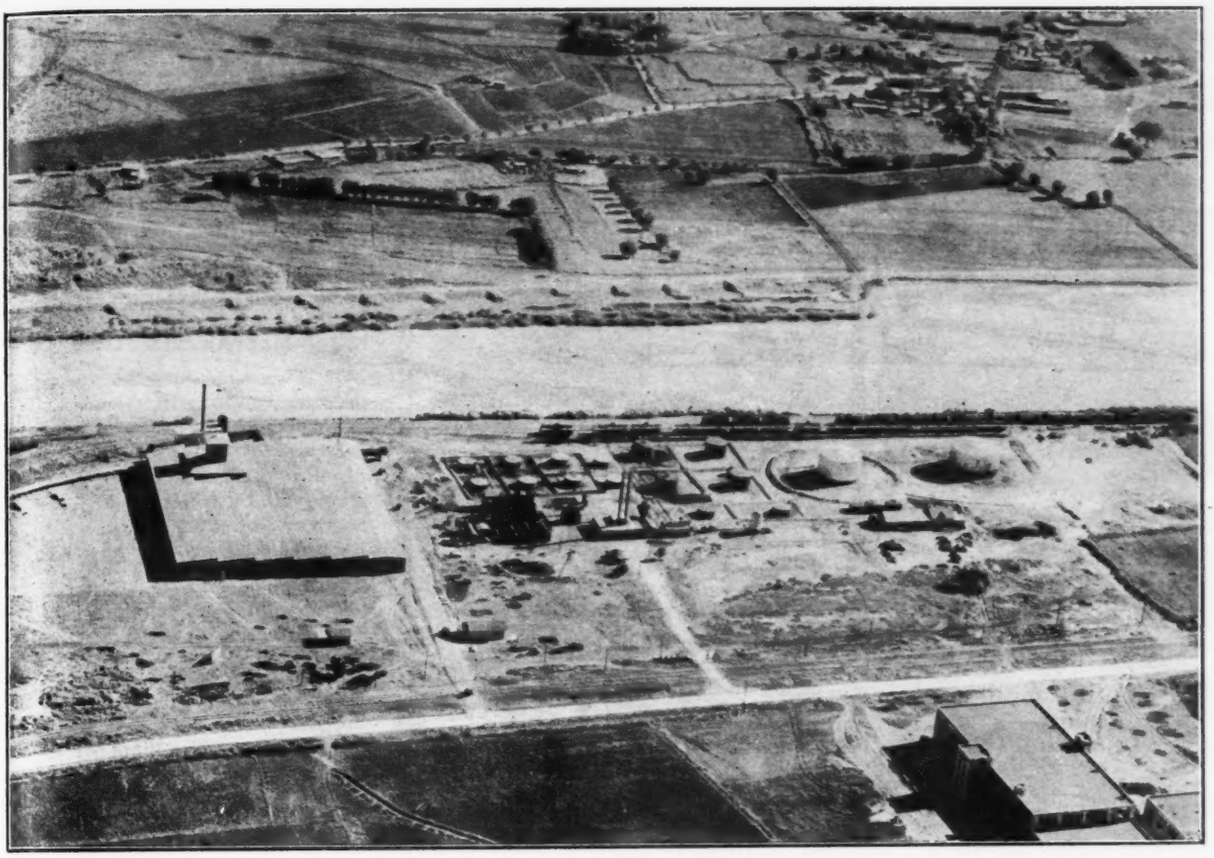
Deal Not Yet Made For Reagan Pipe Line

Staff Special

HOUSTON, Dec. 15.—Although known to have been discussed, no contract has been made as yet between the Humble Oil & Refining Co. and the E. W. Marland interests for the construction of a pipe line outlet for Reagan county, Tex., crude, controlled by a purchasing company formed by Marland. President W. S. Farish, of the Humble, said in a statement last night that preliminary surveys constitute practically everything that has been done.

Mr. Farish returned to Houston accompanied by President Walter C. Teagle, of the Standard Oil Co. of New Jersey; E. W. Marland, president of the Marland Oil Co. of Delaware; Levi Smith, president of the Big Lake Oil Co. and other officials of the respective groups.

Unofficial reports have credited the Humble and Marland interests with discussing a possible contract whereby the Humble would lay about 200 miles of 8-inch line from Reagan county eastward to connections with the Humble pipe line system at Comyn, Tex.



Bird'seye View Of Rio Grande Refinery, El Paso, Tex.

Did you think Mexico looked like this? This picture proves that at least this part of it isn't so bad.

It is an airplane view of the refinery of the Rio Grande Oil Co. at El Paso, Tex., taken from a height of 1000 feet. The narrow strip that runs through the center of the picture horizontally is the Rio Grande itself. The refinery loading rack runs along the river, close to the bank on this side, with the refinery and tanks on this side of the loading rack. According to A. M. Lockhart of the company, who sent in the picture, an 80,000-barrel tank now stands in the square at the extreme right on this side of the river, alongside the other two big crude tanks. This square is blank in the picture.

All the upper part of the picture, on the other side of the river, is Mexico. Mr. Lockhart says: "Too many folks have the idea that Mexico is very much uncultivated country, the contrary which is indicated by the picture. In the upper right hand corner may be seen the outskirts of Juarez. Also note the trees plainly in evidence everywhere on the Mexican side. The territory opposite the refinery on the Mexican side is the territory on which Villa and his gang carried on his battle with the federal forces in 1919."

Some Of Signal Hill Being Restored

By Special Correspondent

LOS ANGELES, Dec. 12.—Companies which participated in the development of the Signal Hill field at Long Beach three years ago are taking steps to restore some of the land to residence district condition, now that Signal Hill has become a city of the sixth class and oil production in certain areas is tapering off.

On the south slope of the now famous hill the Union Oil Co. of California is taking the lead in this work by tearing down the derricks of several wells along Crescent street, which were top-notch producers in their time.

Union's Community No. 3 has already been dismantled and the ground graded back to its former condition. A crew of workmen is now tearing down the derrick of Community No. 6. Because the Community No. 7 is still making fair production the company plans to let it stand for a time, believing that some of the small production that was formerly secured from the No. 3 and No. 6 may be picked up by the No. 7.

Along Almond street and Catalina avenue, where wells three years ago were rated as mammoth gushers, the grease-smeared derricks are being torn down from week to week, and their places are being taken by new bungalows.

Western Refiners to Meet March 3

TULSA, Dec. 13.—The annual meeting of the Western Petroleum Refiners Association will be held in Kansas City, it was decided by directors of the organization at their meeting at Fort Worth during the meeting of the American Petroleum Institute. The meeting will open on Tuesday, March 3. It is probable that the meeting will continue three days.

Talks on Core Drilling

NORMAN, OKLA., Dec. 8.—Frank A. Edson, petroleum engineer of this city, gave an interesting talk on uses of the diamond drill in the oil industry, before the class on oil and gas production at the University of Oklahoma, Dec. 3. Mr. Edson has drilled a number of tests with the diamond drill in Mexico and the Mid-Continent field, and at present is drilling a deep test east of Wynnewood, Okla. The talk given to the class by Mr. Edson is the first of a series of 24 to be given during the present school year by representative men from the petroleum industry.

CLEVELAND, O., Dec. 12.—Pure Oil Co. has decided to discontinue operation of its salt plant at Bell, W. Va., and has contracted to sell natural gas produced on its Cabin Creek properties to the Hope Natural Gas Co. Heretofore this gas, after passing through its gasoline plant at Dawes, has been used at the salt plant.

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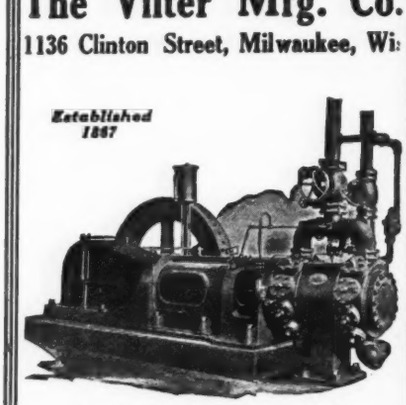

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Crusader Co. Deals For Acreage In Cotton Valley Field

By Special Correspondent

SHREVEPORT, Dec. 12

IT is reported here that an escrow agreement has been entered into between the Crusader Oil Co., of El Dorado, Ark., and the Oil Fields Gas Co., of Shreveport, covering the sale of the latter company's entire holdings in the Cotton Valley district.

No exact details are as yet available, as the escrow period does not expire until Dec. 23; but the consideration involved is said to approximate one million dollars, in round numbers. Not all of the sum, however, is to be paid in cash, as it is said that something more than half of it is to be in the form of deferred payments to be made out of future oil production from the properties. The acreage involved totals more than 500 acres of potentially proven leases, consisting chiefly of the Oil Fields Gas Co.'s lease on the Hope Estate, in the eastern part of the Cotton Valley Field.

The Crusader company, a subsidiary of the British-Mexican Petroleum Co., entered the Smackover field several months ago, buying up the gathering lines of the Arkansas Pipe Line & Navigation Co. and the Empire Pipe Line Co., supposedly with the intention of using them as a nucleus for the construction of a trunk pipe line system from Smackover, Ark., to Monroe, La., whence oil may be transported in barges to New Orleans or to the seaboard. The payments of premiums by the new entrant into the fields is believed by local operators to have been the cause of two retaliatory upward revisions in Smackover heavy oil prices posted by the Standard Oil Co. of Louisiana in September, last, at a time when the market values of other crudes were declining. The next chapter in the story was written on November 20, last, when, in an interview published in the El Dorado Daily News of that date, W. R. Davis, president of the Crusader, mentioned the possibility that his company may withdraw from the Arkansas fields because of a lack of cooperation on the part of producers there. He stated that Smackover operators will sell to the Standard at its own figures; but that they demand a premium when selling to the Crusader.

The Oil Fields Gas Co. is composed of local operators, of which R. J. O'Brien and Belchic & Laskey are the most active. It will be recalled that this company, while prospecting for gas on the Cotton Valley structure, brought in the discovery oil well on property obtained from the Louisiana Oil Refining Corp.

It also is reported here that R. J. O'Brien and associates have sold to the Alabama Petroleum Co. an 80-acre lease located on the eastern edge of the Cotton Valley field for a consideration of $100 per acre in cash and $150 per acre out of half of the first oil produced, if and The tract in question is described as the south half of the northwest quarter of 19-21-9, Webster parish.

May Abandon Deep Test

It is reported that the Evans-Raymond deep test, in 21-21-10, Cotton Valley Field, is to be abandoned after having failed to penetrate the Woodbine sand at a total depth of 3333 feet. The Palmer Corp. is coring at 3,462 feet in its No. 1 Miller, another deep test, located in Sec. 29 of the same township, but outside the productive area.

The Alabama Petroleum Co. has set six-inch casing at 2,500 feet in its No. 1 Smith, located in 29-21-10, one half mile west of the present boundary of the proven area.

The northeastern limit of the productive area was defined last week by the failure of the Woodley Petroleum Co.'s No. 1 Hodges, located in the northwest quarter of the southwest quarter of 18-21-9, which tested salt water from five feet of sand at a total depth of 2,538 feet. The Humble Oil & Refining Co.'s Bodcau Lumber Co. B-5, which offsets the Woodley failure on the west, toward the field, has been bailed dry at a total depth of 2521 feet.

The Louisiana Oil Refining Corp. has built a derrick on the Armour land, in 21-23-9, Webster parish, for what probably will be one of the most important wildcat tests of the current year. The new location is at a point approximately one mile northeast of the famous Sinclair Mayfield gasser, drilled in 1921, which yielded a considerable spray of oil. It is about three and three quarter miles southwest from the western edge of the Haynesville Field, on a known structure, which has yielded half a dozen or more good showings of oil. Ten or twelve sections of land, in its vicinity, still remain untested by the drill.

The Bethany Oil & Gas Co. (Southwestern) has set the second string of casing in another very important test, located on the Wiley land, in 6-22-9, northeast of the Gleason wells and southwest of the Mayfield gasser.

Gas Through New Lines

Announcement was made this week by the Magnolia Gas Co. that gas is being run through its recently completed 215-mile gas line from Shreveport to Beaumont. The entire line, which runs from Cotton Valley, via Shreveport, to Beaumont, is said to have cost in the neighborhood of ten million dollars. The Reserve Natural Gas Co.'s 12-inch line from Shreveport to Sarepta, in Webster parish, a distance of thirty miles, also was completed last week.

Dominguez Field Gets Big Increase

By Special Correspondent

LOS ANGELES, Dec. 12.—The Dominguez field hit its highest mark yesterday in the completion of a well yielding 5800 barrels daily initial flow of Be. crude. The well is the Associated Oil Co.'s Francis No. 3, in the southeastern part of the field. It was completed at 4277 feet and its output has been climbing steadily since it started to flow.

The Dominguez field staged a spectacular performance this week which did not tend to relieve the flush crude situation of the country. It brought in three new wells with a combined initial flow of 10,400 barrels daily, including the Associated's well. The other two are the Shell Co.'s Reyes No. 16, completed at 4100 feet and yielding 3000 barrels and the Union Oil Co.'s Hellman No. 8, completed at 4150 feet and making 1600 barrels.

Three other wells in the field, tested for water shut-off within the last 48 hours, were found to be wet and are being re-cemented.

Pipe Line Man Dies

By Special Correspondent

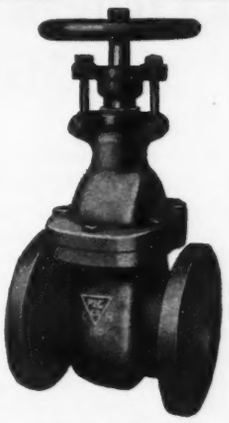
SHREVEPORT, Dec. 11.—H. N. Milter, aged 42, general foreman of the Standard Pipe Line Co., Inc., at Bunkie, La., died at a local sanitarium Tuesday night. The body was shipped to Bunkie for funeral services there. He is survived by his wife, Mrs. Nora Elizabeth Miller, two sons, Lester and Norris, and his mother, who lives at Lock Haven, Pa., one sister, Mrs. E. E. Young, Lock Haven, Pa., and three brothers, H. J. Miller and G. H. Miller of Jersey Shore, Pa., and M. M. Miller of Oxford, La.

Mr. Miller had been with the Standard and its subsidiaries for the past 18 years. He was past master of Bunkie Masonic lodge and was also a Shriner.

Texas Heads Visit Nocona Field

FORT WORTH, Dec. 13.—Amos L. Beaty and E. C. Lufkin, president and chairman of the board, respectively of The Texas Co., visited the Nocona field, Montague county, while in Fort Worth attending the American Petroleum Institute meeting this week. The Nocona field is one of the most interesting of the newly opened fields in North Texas, and is largely a Texas Co. field at the present time. The Texas Co. has several large gassers from the shallow 700 to 800 foot sands, and has just completed a nice pumper in the 900 foot oil sand.

The Texas Co. party included a number of other officials, and district representatives. The visitors were banqueted by Nocona citizens.



P. & C. Fig. 147

This valve is particularly suited to handling crude oil that carries sand and cuts the seats. A 350 pound test valve with the retaining ring construction that makes it so easy to renew seat rings.

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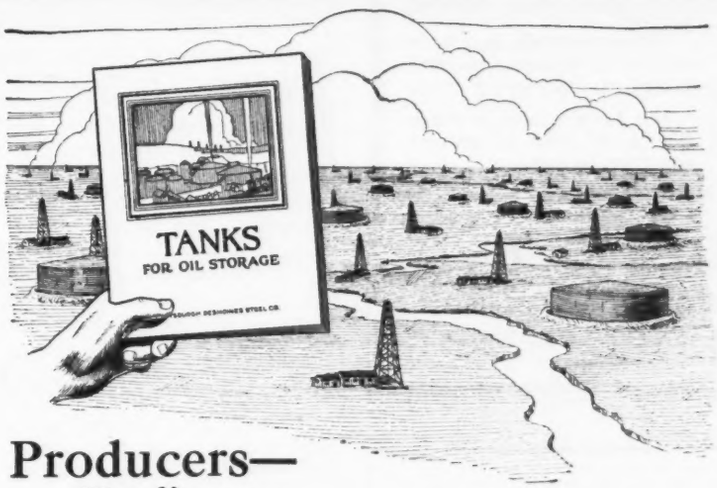

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Pruden System buildings can be perfectly insulated against heat and cold.

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We have openings for a few good men to be our representatives.
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Made of pressed steel.

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Flange flush with barrel shell.

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Standard thread as used by all barrel manufacturers.

Write us for prices.

THE BETTCHER STAMPING & MFG. COMPANY
Cleveland Ohio

Small Orders For Pipe The Rule In Mill Districts

By Special Correspondent

PITTSBURGH, Dec. 16

COMPARATIVELY small contributions of orders are coming to the various pipe makers in this and other producing districts from the oil fields. In the Pennsylvania-West Virginia-Ohio territory, activity has been interfered with somewhat by cold weather. Because at the moment, oil in storage above the ground represents about five months' consumption, oil prices are being held in check which serves as a deterrent when it comes to further expansion.

In the western, southern and southwestern fields, a fair measure of activity continues to be noted but current needs of the oil companies are largely being met from stocks in the hands of jobbers which are unusually well balanced. Reports coming to the trade here from other territories, particularly California, are to the effect that the number of wells drilled each week shows a slight increase over the week preceding, consequently an increased tonnage of pipe is being utilized for oil each passing week.

Jobbers continue to make piecemeal demands upon the mills usually in lots of three to five carloads, many of them well mixed as to sizes, with an occasionally larger tonnage but few really important line pipe projects are in sight at present. Several of these are contemplated for the spring and to obtain satisfactory delivery dates from the mills, it is possible that these may be placed sometime in January or February. Notwithstanding this absence of heavy tonnage orders for oil producing purposes, all of the pipe mills continue to operate on a high average. Standard full weight merchant pipe orders are numerous, particularly in the butt-weld sizes for building purposes, coming from widely scattered territories. The general average among the pipe mills is 75 or 80 per cent of capacity.

Figures recently made available show that 10 per cent of all the finished steel made in the United States last year went to produce tubular goods—wrought pipe, approximately 3,351,025 tons. Of that great pipe tonnage 40½ per cent went into oil country goods, including casing and large diameter line pipe. Ten years ago, the tube mills sent but 35.6 per cent of their output to the oil fields or 619,291 tons. When compared with the 1,357,165 tons shipped to oil territories in 1923, it is seen that the increase in the decade is 120 per cent.

First quarter 1925 specifications on tin plate somewhat overdue started to come in last week to large producers here and included among several hundred thousand base boxes, is one order for 110,000 base boxes of oil can sizes. The Standard Oil Co., of New York has distributed orders for 140,000 base boxes for re-export purposes. This order was shared by the McKeesport Tin Plate Co., McKeesport, Pa., and the Bethlehem Steel Corp. The domestic price of tin plate is unchanged as announced for the first quarter of 1925 at $5.50 per base box, 100 pounds, f. o. b., Pittsburgh district mills, which means $5.60 f. o. b., Gary, Ind.

Eugene G. Grace, president of the Bethlehem Steel Corp., states that a contract has been closed with the Argentine Republic government for the immediate erection of a complete oil refinery at La Plata and intimates that two years will be required for completion of the project. The refinery will have a capacity for handling 14,000 barrels of crude oil daily and it is estimated will cost $7,000,000. Further development of the Argentine oil fields is under way and it is expected that home refining there will encourage the use of motor vehicles and gasoline driven farm implements throughout the South American republic.

The Waite Phillips Oil Co., Tulsa, is starting the construction of a one-story pumping plant to cost with equipment approximately $30,000.

The Pierce Oil Corp., Bank of Commerce building, St. Louis, is to erect an addition to its steam power plant at its oil refinery at Sand Springs, Okla., in connection with its other expansion under way there.

The Sinclair Refinery Co., East Chicago, Ind., is understood to have plans under advisement for expansions in its local refinery with the instalation of additional equipment. Work is to commence early in the spring of 1925.

The Oil-O-Matic Heating Co., Bloomington, Ill., contemplates the construction of a one story 80 x 300-foot cut stone manufacturing plant. C. W. Williams, 207 West Washington street is manager and A. T. Simmons is president.

Wortham Has Visitors

FORT WORTH, Dec. 13.—Wortham and Reagan county, two hundred miles apart as the crow flies, furnished the high lights in North Texas oil fields this week, behaving very nicely while the distinguished visitors of the oil industry were present at the A. P. I. meeting. The closest field, Wortham, was visited by many of the operators at the close of the 1924 meeting on Thursday, and some expressed it as their intention to go to the new Reagan county field.

Reagan county's newest producer is the No. 2 Group 1 of the Texon Land & Development Co. The well drilled sand from 2950 to 2988 feet and had an initial production around 3600 barrels.

ET KEROSENE?

It Pays---

Our store will average $100 a month from the sale of oil.

Fast Service---

The Bowser pump was installed in our store a year ago. My records show that I have been selling 150 gallons a week. The pump is working fine and I am very much pleased with it. It is a very handy pump during rush hours.

Insists on Bowser---

It is understood that the outfits installed are to be manufactured by S. F. Bowser & Company and to be of the latest design.

Hurry Another Tank---

Please step lively on this matter and help out the store at the earliest possible date.

Bowser---Business-Getter---

It has proved to be some business-getter. We have increased our trade by handling kerosene and the only way to handle kerosene is with a Bowser outfit.

Recommends Bowser---

I take great pleasure in recommending the Bowser system, as it makes a very clean outfit to dispose oil from.

New Trade---

By handling oil at our stores I have found that it has gotten us new customers and helped us hold our old trade.

Profitable to Handle---

I figure that my handling oil has increased my business 15% and holds my other trade for small articles. I am well pleased with this proposition all the way through and would not dispose of it.

Best Paying Line---

The outfits are giving perfect satisfaction, and we fgure that by handling kerosene with this system, oil is one of the best paying commodities we handle.

[The foregoing are excerpts from a few of the hundreds of letters in our files. They prove that Bowser makes kerosene a profitable item for grocers to handle—and that, in turn, means increased gallonage for you.]

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Sales and Service Offices and Representatives Everywhere

IN THE MAILBAG

What Can Be Done To Aid Petroleum Research

WHAT is being done to co-ordinate the efforts of persons or organizations engaged in petroleum research, is a question that has been asked many times in the last few years. There is really no agency in direct contact with the various societies which are now doing research work but in the opinion of H. S. Bell, petroleum engineer, co-ordination might well be established by a representative refiners association. Mr. Bell pointed out this possibility at a meeting of the department of manufactures of the National Petroleum Association held recently in Bradford, Pa.

The best known of the organizations interested in petroleum reseach are the Bureau of Mines, American Petroleum Institute, American Institute of Mining and Metallurgical Engineers, American Chemical Society, and American Society of Mechanical Engineers. What they are doing and can do, was summarized by Mr. Bell as follows:

"The work of the Bureau of Mines is well known to all. The production of petroleum is often interpreted as a mining proposition so that the bureau became interested in the problems of this part of the industry at an early date. Little attention was paid to the refiner's problems until comparatively recently. Now the bureau has placed several technicians upon refinery problems and has established an experimental station in the Mid-Continent field where these problems may be studied.

"The American Chemical Society has formed a subdivision of those members interested in petroleum. This subdivision has become very active and has held several successful meetings where papers have been presented for discussion. The papers contain valuable information for the refiner but it must be admitted that they require the interpretation of the technically trained chemist for their best application to the plant problems.

"The American Institute of Mining and Metallurgical Engineers is principally interested in production problems and to date has done very little. While that society publishes a great deal concerning stamp mills, concentrators and other equipment of the manufacturing side of mining, it evidently looks upon the corollary oil refining plant as an industry outside of its sphere.

"The American Society of Mechanical Engineers is at the present time engaged in forming a subdivision of members interested in petroleum. About 200 members have signified their interest and the names of many well known oil men are included. A large proportion have signified their interest in the refining branch of the petroleum industry.

"In reviewing the above list of agencies and societies, it is well to note that with the exception of the Bureau of Mines none of them have any research organization or facilities for experimental work. Their activities are confined to regular meetings, papers and discussions. Many of the papers, of course, represent extensive research by members in the laboratories of their respective companies.

"While these societies through contact of individual members with their respective companies are in close touch with the real problems, nevertheless it would seem that there is an excellent opportunity for a representative refiners' association, such as the National Petroleum Association, to establish contact and assist them to coordinate their activities. In this way, your more pressing problems would be emphasized and a practical viewpoint established with much benefit to the industry."

Mr. Bell also called attention to another field from which assistance might be obtained, the universities. Petroleum departments have been established, he said, in the Universities of Oklahoma and Pittsburgh, New York University, Colorado School of Mines, and Texas Agricultural College. Courses in petroleum have been established in the schools of chemical engineering at Massachusetts Institute of Technology, Ohio State University, and several others. Practical problems in refining might be presented to students of petroleum technology in those institutions, were somebody to undertake coordination of the research endeavors.

The Spoiled Child

ROCHESTER, N. Y., Dec. 11.—The Rochester Motor Terminal, Inc., which operates a service station here, is erecting an eight-story store and office building.

THE EDITORS' VIEWPOINT

Why Price Uniformity Exists

THE meat packers, in talking to the public, have made a virtue of what the oil industry has generally considered a handicap.

Many an oil man has been hard put to explain why, all over the country, all competitors were selling oil and gasoline at the same price. Here's what the meat packers say in public literature put out by Armour & Co.

"Competition in the packing business is evidenced, on the one hand, by the similarity of prices paid for live-stock, and, on the other hand, by likeness in the service rendered retailers and the prices received from them.

"The difference of a small fraction of a cent per pound will enable one bidder in the stock-yards to get live-stock from other competing bidders. A similar condition prevails in the gasoline market.

"Sales running into thousands of dollars hinge on a difference of a quarter of a cent, or even an eighth of a cent per pound.

"Competition in the retail meat business is evidenced even more in the service rendered than in the prices charged."

This argument fits word for word to the oil industry. Our competition is so keen that no one can sell at a fraction of a cent above or below someone else over any portion of the market without affecting the whole market and without affecting the prices of everyone in that market.

This is the soundest kind of economics, but a vast number of economists, so-called, have refused to recognize it. The fact that all companies in an industry sell their products at the same price has been misconstrued by hundreds of alleged economists and accepted by hundreds of alleged lawyers and politicians as prima facie evidence of a conspiracy in restraint of trade.

And yet, the facts are, anyone going into Tulsa bright and early of a morning and offering a quarter of a cent more than the market for gasoline, will get all the gasoline, unless the other buyers want to pay a quarter of a cent more for it, and any marketer going out over any part of his territory and offering his gasoline at a half a cent more than anybody else, will sell less gasoline than he sold the previous day, unless everybody else meets that price. But the reverse is particularly true, any marketer offering that gasoline at a half cent less to any considerable number of customers in that territory, will at once cause everybody to meet that half cent cut.

Tank wagon markets become stationary and everybody sells at the one level. When those selling the majority of petroleum on that market have gone down as far as they can go and still yield a slight profit—then that market becomes stationary at a level and everybody sells at that level, because everybody knows that if they go below that level they are going at a loss.

The oil men should well consider the presentation of this thought as made by the meat packers.—W. C. P.

It's a little late to be seasonably appropriate, yet we do give Thanks that, so far as we know, no oil company calls their service station a Gas Shoppe.

A mutually satisfactory form of marginal gasoline contract seems to be as hard to find as a stamp around the house.

The report is around that a man committed suicide in his car because he got out of sight of a filling station and believed he was lost.

Not All Supply Stores Are Alike

THE other day a little town saw the last of its oil and gas well supply stores close its doors. They will not open again, unless, of course some new development not now expected should occur to revive the once booming field.

Once this town was the center of a real bit of activity. Derricks went up so rapidly that the residents could scarcely keep count. The clang of the toolie's sledge was heard in the land. The thump of the bit and the whine of the sand line resounded throughout the sleepy hills. New faces made Main Street a foreign country to the permanent dwellers.

The rush subsided and the oldsters saw the tranquillity of the town restored. One by one, the business establishments that came into existence to cater to the personnel of oil and gas folded up their trappings and moved to the next center of drilling. The curfew again became a moving force in the community.

Rather an ordinary story. It illuminates, however, some observations on the conduct of oil field supply stores.

The same attraction that a new oil town has for the cheap rooming house, the cut-rate clothing store and other like establishments exists for the cheap supply store. Lower prices are quoted because the hurriedly organized company is not there to give service. Its only object is to get in the money while the good thing lasts. Service always costs money and adherence to a certain price, affording a reasonable profit, must be the policy of the substantial supply company which expects to be in business, not only in this boom field, but in all the others and to remain after the boom has ended.

Sometimes an operator is short of ready cash and needs some equipment in a hurry. Does he then go to the cut-price supply store, whose owner, perhaps, was day before yesterday a cut-price clothing store owner? He does not. He goes to the company whose business is firmly established and whose ability is established to accept as collateral the integrity of the operator.

A new field opens and equipment is required in a hurry. Who is the first one to open a store, the cut-price dealer or the company that is in the business to stay? Often a new store is run at a loss because of the low volume of business done while the drill is determining whether it will be a real field or just another of those conditions of mental confusion. The dealer whose policy it is to "clean up" in a hurry waits until it is certain that a boom will result.

Who is it that stays behind, after the drilling is done, to supply the relatively small amount of equipment for producing the oil? Not the price-cutter. He has gone on to the next boom field, or is again conducting fire sales or creditors' sales of shoddy clothing. Sometimes he leaves without discharging the formality of settling with the manufacturer who has taken a chance on him.

This little town that we told about long ago ceased to supply any real business to the supply stores, but they hung on for years just because their reputations were established on the service they stand ready at all times to give and it wouldn't do to have it said that they had fallen down.—L. E. S.

News from Colorado tells of a wildcat well that so closely guarded that scouts have had to establish a camp on a hillside from where they watch operations through field glasses. Presently binoculars will be classed as producer equipment.

Through prolonged research on the part of our analyst who looks after such matters, we are able to announce that 1927 will contain 53 pay days.

Old Man Oil thanks you for your kindness during the past year and wishes you the very merriest kind of a Christmas

HUNDREDS of oil jobbers in a score of states are bringing to a close a more prosperous year than they would have had if Old Man Oil had not served them. You will benefit if you ask the old gentleman about his complete oil jobbing service. Address him at R. J. Brown Petroleum Company, Boatmen's Bank Building, St. Louis.

NEW OIL STATION CONSTRUCTION

North Platte, Neb.—Hendy & Ogier Auto Co. is building filling station to be opened Jan. 1. The company has installed three storage tanks and is handling Shell products, according to H. E. Smith, oil agent for the J. S. Davis Auto Co.

* * *

Iron Mountain, Mich.—Meilleur Co. is building a combined residence and filling station, to cost approximately $11,000, and is in the market for equipment, according to Theodore Meilleur.

* * *

Fremont, Neb.—Lewis Oil Co. plans to build another filling station in the spring, W. E. Lewis, owner, said.

* * *

Augusta, Kan.—H. I. Clubine is remodeling his old garage building into a service station. Repair department will be at the rear.

* * *

Whitewater, Wis.—O'Neil Oil & Paint Co. has purchased a lot on which it expects to erect a filling station in the spring.

* * *

Baraboo, Wis.—Orriel F. Philbrick, owner of the Philbrick Garage, has purchased a lot for filling station.

* * *

Birmingham, Ala.—The Eighty-One Tire Co. was granted a permit to install a filling station here.

* * *

Moline, Ia.—C. L. Josephson and T. E. Lundell were granted permits to build filling station here.

* * *

Watonga, Okla.—Eason Oil Co. of Enid, Okla., purchased corner lot here for filling station.

* * *

Maryville, Mo.—Marland Refining Co. has been seeking permit to build service station here.

* * *

Marshfield, Wis.—A service station is being erected here by the Marshfield Oil Co.

* * *

Mabank, Tex.—Sam Mitchell and J. C. Ballard each building filling stations here.

* * *

Kansas City, Mo.—William McMullen seeking permit to build filling station.

* * *

Oklahoma City, Okla.—T. H. Pointer is seeking permit to build filling station.

* * *

Whitewater, Wis.—Standard Oil Co. of Indiana is building filling station.

* * *

Greensburg, Ind.—George Link building filling station.

Macon, Ga.—Gulf Refining Co. building two service stations, according to J. E. King, salesman for the Gulf here.

* * *

Kansas City, Mo.—Derby Oil Co. leased property on which it will build filling station.

* * *

Pawhuska, Okla.—Waite Phillips Oil Co. gets permit to build service station here.

* * *

Sidnay, O.—Ray Clayton and Elmer Brunner building filling station here.

Nashville, Ill.—Standard Oil of Indiana bought property here for filling station.

* * *

Chicago.—Standard Oil Co. of Indiana has purchased two sites for filling stations.

* * *

Manistique, Mich.—Standard Oil Co. of Indiana purchased site for service station.

* * *

Jefferson City, Mo.—Pierce Oil Corp. to erect filling station here, to cost about $4,000.

* * *

Del Rio, Tex.—H. I. North and C. E. Long are building a modern service station.

* * *

Huntington, Ind.—Refiners Oil Co. has filed petition to erect filling station.

HERE AND THERE

John J. Vrooman, director and officer of the Gulfcoast Oil Refining Co., Gulfport, Miss., and A. C. Sherman, Mobile Oil Co., Mobile, Ala., have leased the plant and equipment of the Gulfcoast company and are carrying on the business under the name of the Gulfcoast Oil Co. The new company does a jobbing business in southern Mississippi, and has closed its refinery for the present, Mr. Vrooman, manager, reports.

* * *

A. G. Martin has purchased the Home Oil & Gas Co.'s service and bulk stations at Lamesa, Tex., and will do a jobbing business. Messrs. Speck, Cox and Speck retired from the Home company.

* * *

M. M. Watkins recently purchased the interest of C. B. Watkins in the oil and accessory business at Brookhaven, Mass., and has added a 16,000-gallon storage tank for motor oil, bringing total storage to 60,000 gallons.

* * *

C. B. Hood, manager of Joplin Oil Co., Joplin, Mo., reports that his company has enjoyed the best year in its entire business career, and that business increased one-fifth over any other year.

* * *

T. M. Lueker has succeeded I. B. Hall as branch manager of the Grafoleum Products Co. at Wichita, Kan., according to C. E. Harrell, vice-president.

* * *

W. M. Tatom, formerly district salesman for The Texas Co., working out of Lubback, Tex., has been promoted to special agent at Sandersville, Ga.

W. S. Hubbard, W. S. Hubbard & Co., Philadelphia, N. Y., distributor for Sinclair Refining Co., has just returned from New Brunswick, Canada, where he has been on a three weeks' moose hunt. Mr. Hubbard says game was plentiful. He brought home one moose and two deer.

* * *

F. B. Crocker recently occupied the M & S Service Station on state route 12 at Fostoria, O., a good location for a filling station. Mr. Crocker will handle Sinclair products, according to G. D. Holzworth, agent for the Sinclair at Tiffin.

* * *

H. A. Elliott, Elliott Benoline Stations, Toledo, O., reports "business is getting better with us and we are very optimistic for 1925."

Junior Here & There

H. P. Denton, salesman for the Sinclair Refining Co. at Hamilton, Ill., is the proud father of a girl born Nov. 25, W. H. Fiske, of the Sinclair's Chicago offices, reports.

* * *

Born to Mr. and Mrs. F. E. Denison, Jr., an eight pound girl, Florence Ellen. Young Miss Denison's father is salesman for the Standard Oil Co. of California, Chowchilla, Cal.

Same Old Christmas, Same Old Friends

By Andrew R. Marker

THE SAME old Christmas here again, same old song in the hearts of men that the angels sang at Bethlehem. The same old smiles, the same old joys, the same old piles of Xmas toys—'twas just the same when WE were boys. Old Santa, too, is just the same, just as hearty, just as hale; ten thousand youngsters bless his name and write him letters by the bale. Though winter snow is in his locks, eternal youth is in his eye, and as he fills the children's socks, he chuckles on the sly. Same old pine tree, bending low, with the same old gifts we used to know—oh, the years may come and the years may go, no matter how the winds may blow, 'tis the same old Love of the long ago. The same old Pa's, the same old Ma's, the same old jolly Santa Claus, sure the day's as sweet as it ever was. Same old tokens as of yore, same old dewdads by the score, and "gift" cigars, a box or more, we'd gladly donate to the poor. But best of all, as the old year ends, we thank the Lord for THE SAME OLD FRIENDS! Though some may dwell in "marble halls" and some may toil in overalls, thank God their sameness never palls—they're just "old friends" when Christmas falls. Same old Friends, to memory dear, to each of you we extend this same old wish from hearts sincere: A Merry Christmas, dear old boys! May the same old cheer, the same old joys, attend you all this coming year!

ELLIOTT JONES & CO. INC.

REFINERS OF PETROLEUM

SAN ANTONIO, TEXAS

Failures Narrow Prospective Area In South Vernon Development

By Paul Wagner

STAFF REPRESENTATIVE

FORT WORTH, Dec. 11. FAST upon the heels of two failures in the South Vernon area that had delimited the productive pool to approximately a half mile in width comes further discouragement in the results obtained by Bridwell & Heydrick in their No. 3 Stephens test, which at total depth of 2065 feet had not come into production.

The No. 3 Stephens test of Bridwell & Heydrick is located between the No. 1 well of the same interests, in the northwest corner of Sec. 83, and their No. 2, which later made 12 million cubic feet of gas at the 1246-1259 level.

Petroleum production in the South Vernon pool comes from sands above and below the 2000 foot level and wells completed for oil range from one to five locations away from the No. 3 Stephens test.

The narrowing of the productive area to a probable maximum of a half mile in width had come toward the end of last week, when the No. 1 Richardson test of McCamey & Sherrin, in the northeast of the northwest of the southwest of Sec. 83, a quarter of a mile south of the South Vernon Oil Co.'s production on the W. H. Stephens tract was abandoned as dry at 2083 feet.

Northeast of the South Vernon Oil Co. production about three-eighths of a mile, and a similar distance slightly north of east of the No. 3 Stephens failure of Bridwell & Heydrick, the C. Zipperle test of Prince Brothers, in the southwest of the southwest of the southeast of Sec. 84, had failed to pick up oil indications at 3084 feet.

The Zipperle and Richardson tests, therefore, had already delimited the field in width to a maximum of approximately one half a mile before the Bridwell & Heydricks No. 3 Stephens failed to pick up the pay and further complicated accurate consideration of what might be expected in the way of further field extensions beyond the original "nest" of wells at a point where Secs. 83, 84, 99 and 100 corner into each other.

Richardson Low at Surface

The Richardson failure of McCamey & Sherrin was 16 feet lower at the surface than the producing wells to the northward, a condition that would be regarded as significant in most producing areas but which meant less from the viewpoint of definite conclusions in the South Vernon area because surface topography does not necessarily conform to sub-surface structure in territories such as the Wilbarger county division of the Greater Wichita Falls district.

It was regarded as more or less significant, howeer that the Charles Kolp test on the W. T. Waggoner land, two locations west of the Wells-Guiberson production, in the southeast corner of Sec. 99, had been completed last week for only 150 barrels, initial production at 2004 feet.

The relatively small initial production of the Kolp well was taken to indicate the possible pinching out of production toward the western edge of the pool; and studied in relation to the northwest-southeast trend of oil accumulation in this general territory, this was regarded as significant, especially when checked against the old Zacaquiesta failure at 2615 feet, to the northwest, and the Underwood failure at 2201 feet, to the southwest.

Unless unmeasured factors are developed, and this is an area where surprises are not to be unexpected, it would appear on the basis of known evidence that the pool is to be narrower even than indicated by last week's results in the Zipperle and Richardson tests.

Without the "nosing" out of the pool in one or more directions, the current evidence indicates that productive ground will be confined to little more than 600 acres, which has been the areal extent accredited to the field by the more conservative estimates.

Failures Surround Pool

Until the recent failures exerted their delimiting influence, however, it was regarded possible that the pool might "nose out" between some of the dry hole failures that virtually surround it and might reach a distance of two or three miles in a southeasterly direction to include possibly parts of 80, 81, 66 and 67, besides more of Sec. 84.

Wells that originally found the prolific pay as high as 1967-1977 feet in the South Vernon pool were deepened through a hard lime shell and broken shale formation to a producing horizon approximately 50 to 75 feet below the level where oil first was found. Almost invariably, the productive wells showed considerable increases in daily average production at the greater depths reached.

It was at first feared to deepen them from the 1970 and 2000 foot levels, but after one or two of them had been drilled to the lower horizon by the more courageous operators it was found that no water troubles were prevalent to discourage this practice. The result has been the more general policy of early deepening of wells completed in the first pay.

Located 24 miles west of the famous Electra field, which extends slightly across the Wilbarger line from Wichita county, the South Vernon pool is the first important production to be obtained beyond the westward limits of the previously mentioned field.

Sigler Development Recalled

In the spring of 1920, at a point approximately three miles south and a little east of the pool, a single well that was originally rated good for 100 barrels daily was completed by Lloyd Sigler and others, who reorganized what had been known as the Prescott-Peoria Oil Co., into the later Sigler Oil Co. That well and a smaller completion, which offset it, constituted the only production found in the area, notwithstanding that tests resulting in failures were drilled in all directions.

The No. 1 well of the Sigler interests, which produced at 2041 feet and which reached total depth of 2175 feet, is still credited with daily production of 65 barrels.

After these disappointments, which are shown upon an accompanying map, it was not until the Zacaquiesta failure, about a half mile northwest of the present field, that special attention was given to the area 10 to 12 miles south of the town of Vernon.

Although itself going into the casualty column, the Zacaquiesta test gave the encouragement that caused the South Vernon Oil Co. to drill its No. 1 W. H. Stephens, near the center of the northwest quarter of Sec. 83, which came in for 100 barrels daily at 1967-1977 feet, January 14, 1924.

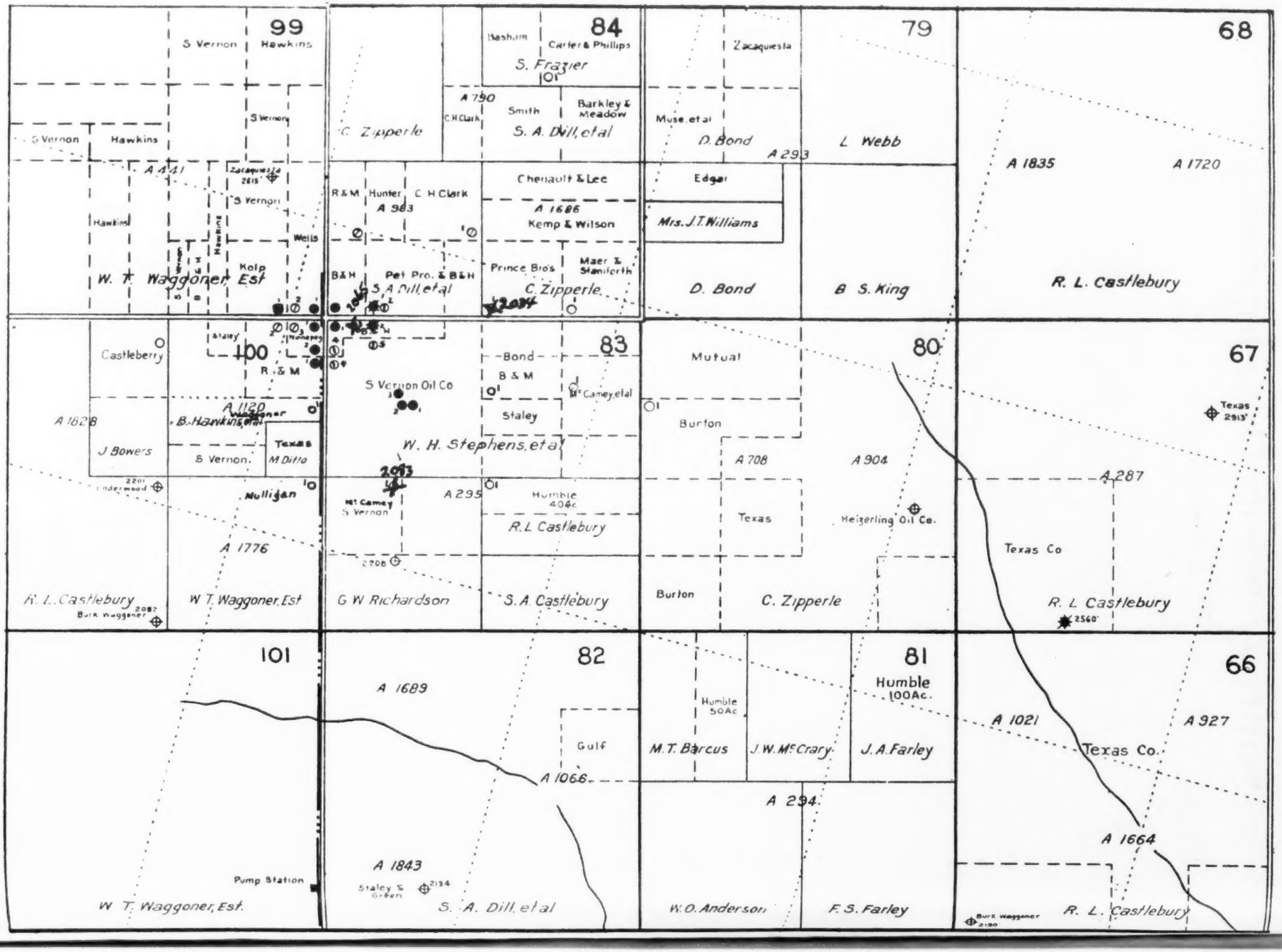
Little attention was attracted, however, until the Wells-Guiberson test, on 20 acres out of the southeast of Sec. 99, encountered a sand good for 25 barrels daily at 1994-2000 feet, August 23, last; increasing to 700 barrels, or more, September 29, when deepened to 2017 feet.

After the relatively spectacular showing of the Wells-Guiberson No. 1, under the active management of Miss Thelma Wells of Witchita Falls, the South Vernon Oil Co's. well on the Stephens was deepened and made maximum daily production of 107 barrels an hour.

These two tests were the signals responsible for a small sized boom and the other wells shown on the accompanying map soon got under drilling headway. The results in oil production are indicated by a tabloid history of producing wells, which forms a part of this article, and the failures drilled in

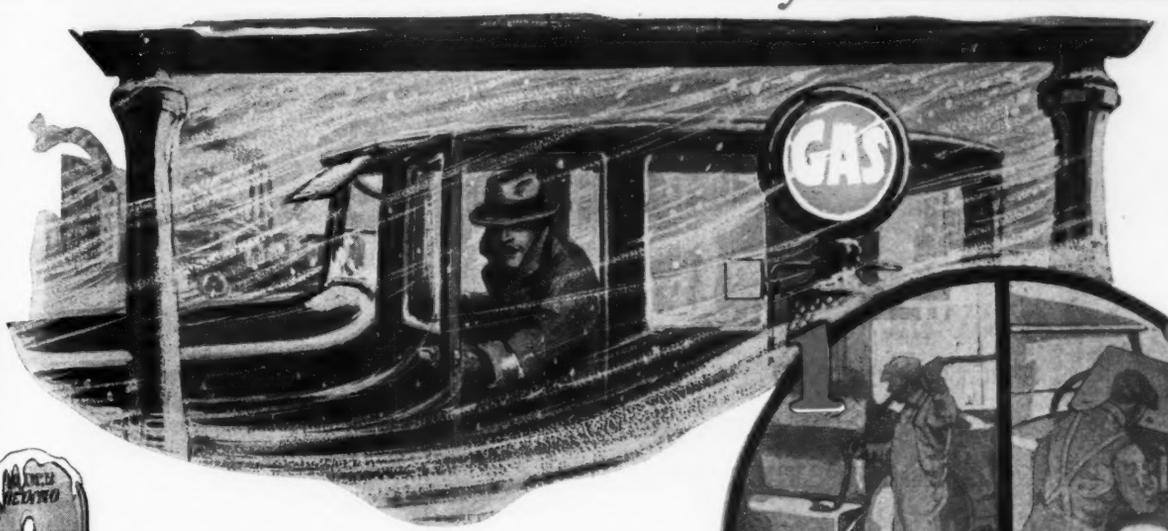
(Story continued on page 78)
(South Vernon map on next page)

Map Of South Vernon Pool Wilbarger Co. Texas



A Bu

A Cold Weather Business Builder —Charm



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What are you going to do about your customers' gear lubrication needs this winter? Are you going to continue to sell them greases that don't lubricate—that are totally unfitted to survive the stern, exacting rigors of winter driving?

Or are you going to give your customers honest lubrication service? Are you going to join the ranks of that increasing army of oil jobbers who are rendering a genuine lubrication service to their customers—who are building business, and making dollar profits with Charm—the 100% Semi-fluid Gear Lubricant?

Charm is not a grease. *It is a 100% oil-base lubricant.* Contains no water to freeze in zero weather. No harmful vegetable fats to cake and channel. Charm maintains its fluid, all-lubricant body in coldest weather. Promotes easy gear shifting, prevents wear and tear and lengthens operating life of gears.

Charm is a 14 karat business builder. It's a profit opportunity to the keen, industrious, alert jobber, who has the enthusiasm, the ambition and who will extend the whole-hearted co-operation to merchandise this new service-giving product to his customers. To such jobbers we would like to outline our merchandising plan.

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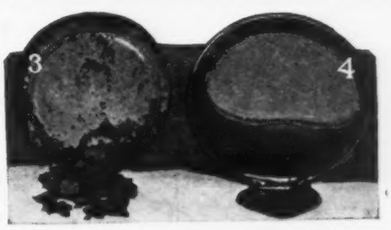
100% Charm Semi-fluid Lubricant TRADE MARK

Make These Tests Yourself!

Take small quantity of any grease in stock. Roll into a ball about as large as a good-sized marble. Place in container--top of varnish can will do. Pour one-third full of gasoline. Now take similar quantity of Charm (No. 2) and place in tin about one-third full of gasoline. Touch match to contents of both tins and allow to burn out.



Here's the result:

Note that the grease in tin No. 1 turns into a residue (see illustration No. 3 after test). All lubrication life burned out. Nothing left but burned fat--hard, caky, gritty--a dangerous substitute for lubrication. Now note Charm (No. 4 after test). Returned to original consistency. Intense heat has failed to break it down. No fatty acids or filler to burn out, harden and cake. A lubricant that remains a lubricant under all conditions.

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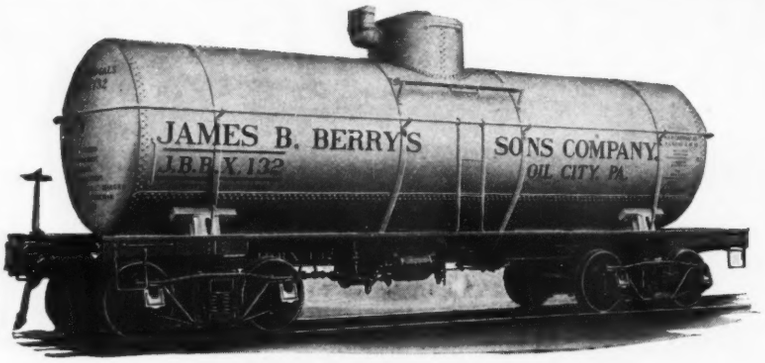

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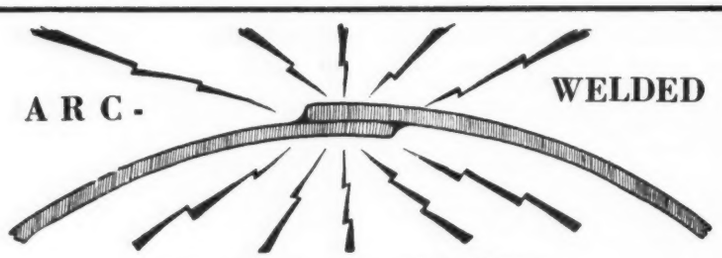

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(Continued from page 75)

the adjacent area are shown by the map.

Four Pipelines in Field

Originally, production was moved out of the field in tank wagons put into the service by Bridwell & Heydrick. In October, the Waggoner Refining Co. operating a plant at Electra, built a 4-inch pipeline into the field.

More recently, the Sinclair interests extended their Witchita Falls district facilities to the pool with a 4-inch line; the Texas Company put a 6-inch line across to it; and the Humble Pipeline Co. is about to complete its combination 4-6 inch outlet that is being extended from Young County.

Besides the completed wells, a total of more than 30 have taken the form of definite locations or drilling tests. A lack of drilling water has impeded progress, but except for such a contingency it is possible to complete tests to the sand with rotary tools in about 30 days. Bridwell & Heydrick laid a 4-inch water line from Paradise Creek, a distance of about four miles, to their development.

Some of the tests are being put down with rotary equipment and others with cable tools. Contract drilling with cable tools is costing generally about $4 a foot.

Because of the lime horizons encountered at some levels, drilling becomes hard in comparison with even deeper operations in other parts of Texas, where a 3000-foot hole can be put down to the sand in 15 to 18 days.

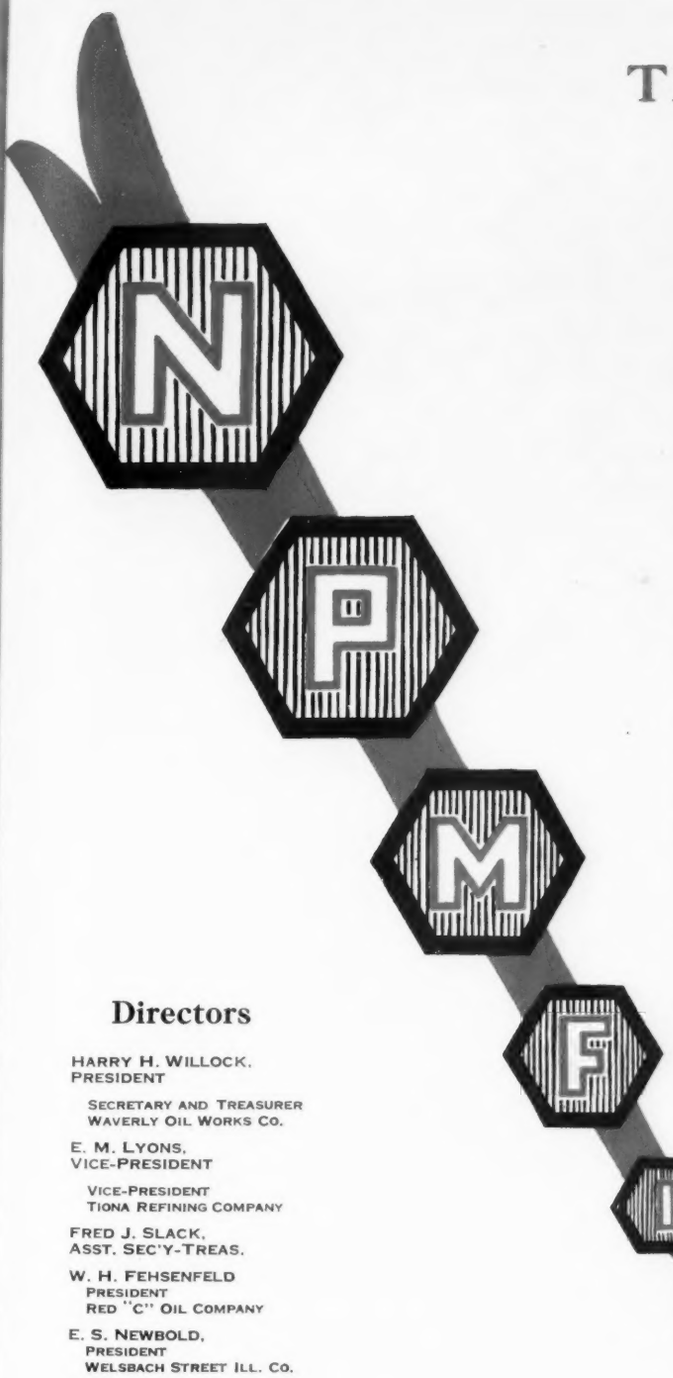
Area of Small Operators

Except for the Humble Oil & Refining Co., and The Texas Co., neither of which have acreage closer to the established zone of production than a quarter of a mile, not a single major operating interest is represented in the South Vernon development.

The Mutual Oil Co. recently purchased acreage about as far away as the larger leaseholds of the Texas and Humble companies, but the Mutual, while a major interest in the Rocky Mountain region has not reached similar operating proportions in the southwest as yet.

BEAUMONT, CALIF., Dec. 11.—The Standard Oil Co. of California recently completed a new station at Whitewater, Cal., to supply Whitewater and Palm Springs with gasoline and oils. Palm Springs is one of the well known winter resorts here, according to R. E. Dillon, special agent for the Standard at Beaumonts. Arthur Dysart is in charge.

GREENFIELD, Mo., Dec. 11.—Brooking Bros. have just completed a modern service station, handling Red Crown gasoline and Polarine oils and greases. Tourist trade will be given special attention, according to N. J. Brashear, salesman in this territory for the Standard Oil Co. of Indiana.



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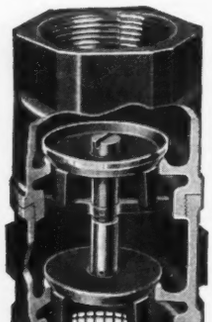

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Jacob France

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Mr. France is devoting his best efforts to building up an efficient marketing organization, the first step in which was the taking over of the Taxman Refining Co. some months ago.

Although keeping in the background, Mr. France has been an active figure in the oil business for years as vice-president and general counsel of Cosden & Co. since its organization in 1913. He is understood to have exercised a strong influence in guiding the company's affairs. He is 42 years old and a native of Baltimore. He is a lawyer by profession, having been for more than 20 years a member of one of the leading law firms of that city, France, McLanahan & Rouzer.

TROY, N. Y., Dec. 11.—George J. Hart, manager of the Hartoil Co., of this city, says his company has added two trucks to its equipment, making five in all. The company has obtained a permit to build a garage to be started next week which will store 15 cars.

Build Big Service Station

PENN YAN, N. Y., Dec. 11.—D. C. & R. F. Shay Oil & Gas Co. has opened a service station, with storage capacity of 30,000 gallons. The station uses two Pittsburgh meters with gravity systems, operates one truck and handles Emco products. Mr. Shay believes the station is the most up-to-date between Elmira and Rochester, N. Y.

CARTHAGE, ILL., Dec. 11.—Dr. E. H. Herring has just opened a new drive-in service station here.

UPPER SANDUSKY, O., Dec. 11.—M & S Oil Sales Co. recently completed a warehouse, which will accommodate two car loads of lubricating oil, two trucks and have space for 100 drums. O. J. Myers is manager of the company.

Osage Nation, Unmeasured Reserve, To Retain Importance In Future

By Paul Wagner

STAFF REPRESENTATIVE

OSAGE county, commonly known as the Osage Nation because of its having been set aside by the United States government for the tribe of Indian wards whose name it bears, embraces an area of approximately 2350 square miles.

The Osage Nation occupies a peculiar place in the petroleum producing situation of Oklahoma and the Mid-Continent because of the restrictions placed upon the leasing of the Indian lands within its boundaries.

Restrictions in effect work to the end of causing development to move forward under conditions of control which eliminate the excesses of competitive activities other than the bidding up of desirable leaseholds at the Pawhuska auction sales.

A further effect of these restrictions is the limiting of new development to the periods subsequent to these sales; and as only a limited number of leases are sold at any one time the development of the county as a whole is, and will be, spread over a period of years.

This situation makes it impossible to say definitely what the future possibilities of the area will be, except in the most general terms. In view of the success already attained, however, it is reasonable to believe that unmeasured reserves of sizeable proportions may exist.

A discussion of the Osage naturally follows that covering the areas to the East and South, as the earlier production in the county was associated with discoveries along its boundaries.

The Avant pool is the Osage extension of the Dewey-Bartlesville field; and the Osage Junction and Boston pools were continuations of the Cleveland development.

The first lease in the county was given in March, 1896, by the Osage Council to Edwin B. Foster and was to run for a period of 10 years. This lease ceded to Mr. Foster all the oil and gas rights on the entire reservation.

Foster later assigned his lease to the Indian Territory Illuminating Oil Co., which kept the gas rights and subleased the oil rights to a number of other operators.

In March, 1905, Congress renewed this lease on 680,000 acres in the eastern part of the county and granted an extension of 10 years, making the lease to terminate in 1916.

After a series of hearings on the subject, a resolution was adopted in June 1915 by the Osage Council and approved by the Department of Interior, which provided for the releasing of the acreage included in the original lease but under terms which eliminated the Indian Territory Illuminating Oil Co. as intermediary.

Producing leases were afterwards released, generally to existing sub-lessees in quarter-section units and not to exceed 4800 acres, except such units on which the producing wells were capable of averaging 25 barrels or more per day on July 1, 1915.

The latterly mentioned units, together with the leases on such producing lands as were not leased to former holders, were retained by the Osage tribe and offered at public auction. Non-producing lands which were also retained are still being auctioned periodically and generally with considerable regard for bonuses that sometimes reach fabulous figures when quarter-sections are offered in such fields as Burbank and other outstanding pools.

Boston First Sizeable Pool

First sizeable development in the Osage was in what is known as the Boston pool, in townships 21 and 22N, ranges 7 and 8E. One well located in 1-21-7 had initial production of 2000 barrels of oil and all the wells drilled in this section had average initial of 350 barrels.

Boston pool was representative of the best subsequent production in the Osage as development spread northward and prior to the Wilcox sand discoveries north of Hominy. The Bigheart area, which came into prominence in 1915, is included in this statement.

Until Burbank, which came on still later, the fields of the Osage never reached the 100,000-barrel mark of daily production and were, therefore, less spectacular in their appeal, although the aggregate production of the county from 1901 to the end of 1919, just preceding the bringing in of Burbank, had been roundly 115 million barrels. Burbank was discovered on May 18, 1920 by the Marland interests.

Burbank, which had produced a total of 78,472,874 barrels, July 1, 1924, and which had been extended across the west boundary of the Osage into Kay county, included 20,166 acres of proved ground. It had been not only a development of outstanding proportions in the Osage but in the general Mid-Continent territory as well.

As late as Nov. 1, 1924, Burbank was producing 70,850 barrels daily from 1630 wells and the ultimate yield set up for it was approximately 131 million barrels.

Final Burbank recoveries had been estimated on the basis of decline curves in competent quarters and of the 131 million barrels estimated ultimate, it was set up that roundly 52 million barrels would be produced after July 1, 1924.

The earlier production in the Osage came from those sands above the Mississippi lime which were producing in other parts of Eastern Oklahoma. Chief among these were the Bartlesville and Glen sands.

Structure of the then producing area also conformed rather closely to that of the districts bordering it. The discovery of Wilcox series production, of course, opened a large part of the developed territory within the county to possibilities at this deeper level.

Burbank Sand Different

The Burbank field presents an entirely different type of production in that sand conditions play the important part in the accumulation. Whether or not a similar condition may exist in other parts of the Osage is a moot question, which only the drill can answer. Recognized geological opinion, however, does not offer much encouragement in this direction.

Undrilled structural indications are known to exist in various parts of the Osage, but the lands on them either

Foreword to Article 6

ACCUMULATED data on the regions of Oklahoma which have yielded the greater portion of that state's petroleum are broad general, and in many instances, specific guide to discovery of new pools. Certain other portions of the state are not so well known, geologically, and knowledge of them is in the making.

* * *

Mr. Wagner has covered in recent issues of National Petroleum News and in the present one, areas which have had the most intensive development. In Article 7, to appear in the Dec. 24 issue, he will tell of the part that core drills are playing in central north Oklahoma, where pools should still be found corresponding in some particulars to the Tonkawa development. He will describe a number of the fields that have been found in that general area.—Editor

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have not been leased or they have n
been drilled because of unsatisfacto
conditions in the industry in 1924.
a number of instances, the Departme
of the Interior at Washington has e
tended the time limit of drilling r
quirements on lands already leased b
cause of the heretofore mentioned co
dition.

The orderly development of Wilco
series sands wherever they may be foun
beneath the older producing levels o
the Osage is made possible by the fac
of such earlier operations.

An individual well example is th
No. 6 Kohpey of The Texas Co., i
the northeast of 29-25N-
8E, which November 15, 1924 at abou
100 days old had produced roundly 435,
000 barrels of oil from the Wilco
horizon and still was making 4168 barrel
daily. Although surrounded by shallowe
development, this was the first well i
that Osage county pool to be drilled to
the Wilcox level.

Only to the extent that Wilcox pro
duction would be offset on adjoining
leaseholds of other interests would such
development take on a competitive phase.

More Wilcox Pools Forecast

Further, the possible extension of pro
duction limits of the Wilcox series into
unleased parts of the Osage is indicated
by the discoveries at Morrison and
Tonkawa, to the west; and at shallow
levels of southeastern Kansas and north
eastern Oklahoma, which latter lie to
the northeast of present Osage develop
ments.

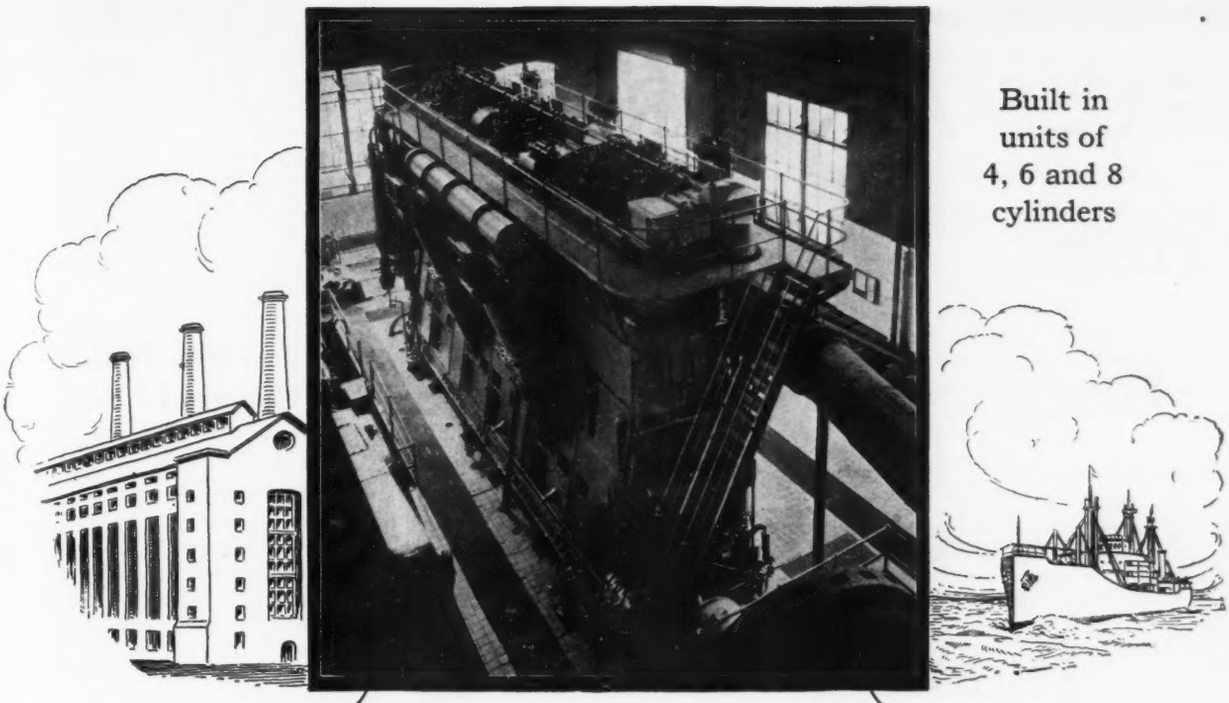
Some extensions of production in the
upper sands may result on acreage at
present unleased. In the northern and
western parts of Osage county lies a
considerable area which is as yet un
drilled. To this extent its possibilities
are still a question for conjecture, but
surrounded as it is by production the
county constitutes one of the most valu
able prospective areas of the Mid-Con
tinent general division of the industry.

Besides the bounding of this undrilled
area by oil development elsewhere within
the Osage, and to the west of it in
Central North Oklahoma, the circle of
production is made complete by the
important recent fields in Sumner and
Cowley counties, Kansas.

Need of Production Factor

The most influential factor, probably,
which will govern new developments in
the Osage will be the return of the
balance between production and con
sumption in the industry.

The Department of the Interior is
naturally concerned in securing the
largest possible returns from this de
velopment for the benefit of its Indian
wards, whose bonuses and royalties con
stitute a common fund. To their credit
millions of dollars have already been
piled up by the government and not
distributed, except in relatively small
proportions at stated intervals. Hence



Built in units of 4, 6 and 8 cylinders

Tested on land

Before the Bethlehem Oil Engine was marketed, two 6-cylinder units were built and tested. The first engine, after a long period in power station work, was installed in one of Bethlehem's ore vessels, early in 1920, where it is still in service. It was replaced in the power station by a second engine which gave continuous satisfactory service over a period of 18 months.

Tested on sea

5 Years of Service— *then* offered to power users

THE first Bethlehem Oil Engine, a six-cylinder unit of 2900 B. H. P., was completed and placed in service in our own power station in November, 1918.

But it was not until December, 1923, that the Bethlehem Oil Engine was offered to other power users.

During the five intervening years this engine was given critical tests, and was placed in service over long periods—to establish beyond any doubt its ability to meet the demands of American power users.

Five years devoted to test service might be considered superfluous, in view of the time spent in designing the Bethlehem Oil Engine, and the elaborate experimental work and research on which that design was based.

But this is the advantage gained from those five years of gruelling tests:

They enable Bethlehem to offer this American engine to power users as a product definitely past the experimental stage—a Diesel-type oil engine that has again and again proved itself a power source that fulfills every requirement.

The Bethlehem Oil Engine is offered, not on the basis of what it may be expected to do, but of what it has actually done. Its thorough capability, its endurance, are a matter of record, of demonstrated fact.

BETHLEHEM STEEL COMPANY, *General Offices: Bethlehem, Pa.*

Sales Offices in Boston, New York, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Detroit, Chicago, Cincinnati, St. Louis, San Francisco

BETHLEHEM OIL ENGINE

Large Unit Type

GRUSS AIR SPRINGS

Help Keep Trucks Running

By absorbing road shocks (even the toughest) Gruss Air Springs prevent breakage and cut repair bills.

They avoid the constant loosening of nuts and bolts, the shaking to pieces of radiators, headlights and fenders.

They eliminate the twisting and wrenching of frames. They absorb the vibration, recoil and side-sway.

That's how they help keep trucks *in* profitable operation and *out* of the repair shop where every hour lost means overhead loss!

That's why Gruss Air Springs are in use in every division of the Oil Industry—producing, refining, marketing.

If you are not already a user of Gruss Air Springs let us send you the complete facts so that you may judge the advantages of this equipment for your trucks.

The Cleveland Pneumatic Tool Co.
Cleveland, Ohio

GRUSS AIR SPRINGS
AS MF'D BY THE CLEVELAND PNEUMATIC TOOL CO. CLEVELAND - OHIO
For Trucks - Buses - Passenger Cars

the Department's leniency in periods of industrial distress.

There is little doubt but that these lands would be leased in conformity with the competition for prospective oil properties were the industry to undergo a reversal of the producing situation and feel the pinch of a shortage of crude. This would result in generally higher prices for both the oil produced and the bonuses paid for leases.

Hylan Wants Tank Wagons To Operate In New York

NEW YORK, Dec. 12.—That a saving of $7,000,000 on gasoline to New York car owners and $250,000 to the city would be effected annually were the present city ordinance amended which prohibits the delivery of gasoline in tank wagons within the city, is the declaration of Mayor John F. Hylan in the proposed amendment he recently sent to the board of aldermen for adoption. New York is the only city in the country which does not permit tank wagon delivery of gasoline on the streets but prescribes in its code that it must be delivered in steel barrels.

The fire hazard object which is frequently raised against the use of tank wagons is one, Mayor Hylan says, that comes only from those interested financially or otherwise in the steel barrel business. He also calls particular attention to the board to the fact that the city fire department has in its service three tank wagons of 900-gallon capacity each to make prompt deliveries of gasoline to fire apparatus in attedance at fires and that it has been found that no hazards are entailed because of the use of tank wagons. Further, that the United States government is at present delivering gasoline through the streets, in tank wagons for the mail service of this city and that no accidents have accompanied such deliveries.

Mayor Hylan points out that the city has been paying 5.29 cents more per gallon for gasoline than would be necessary if adequate storage facilities were provided and tank wagon deliveries permitted, and in order to eliminate these high cost conditions, states that the city plans to erect three municipal gasoline storage stations of 300,000 gallon capacity which would then enable the city to purchase gasoline in bulk when prices are low and to store it for future use.

A statement charging monopoly of the gasoline business by the Standard Oil group in New York was made by Mayor Hylan, in which Northrop Clarey, head of the publicity department of the Standard Oil Co. of New Jersey, denied stating that there was no monopoly on the part of the Standard of New York, that easily 25 large oil companies sell gasoline in the New York market, none of which are affiliated in any way with the Standard.

End Point Of California Casinghead Lowered

LOS ANGELES, Dec. 13.—A survey recently made by Los Angeles oil statisticians shows there has been an increase in the quality of casinghead gasoline manufactured in southern California during the last few months. Until recently it has been customary to manufacture this product with an end point of 400° F. or even higher. The end point of the product manufactured by 11 of the largest plants in Los Angeles and Orange counties at present averages less than 375° F.

There is an active market for casinghead gasoline in the Los Angeles district at present. While most of the material sold under contract suffered a price decline of 2½ cents in line with two recent reductions in gasoline prices, casinghead gasoline which is sold spot cash, has hardly declined in price. There is only a small available supply which is taken by small companies at from 10 to 11 cents per gallon. None of the larger oil companies is paying such prices as these, and it appears that the major operators in the market for casinghead gasoline are not inclined to bid more than 6 and 6½ cents under the retail price of gasoline as sold in Los Angeles.

The development of casinghead gas plants has been one of the outgrowths of the southern California production boom at Huntington Beach, Long Beach and Santa Fe Springs, which started in 1921. Because of the heavy gas pressure in the wells of these fields and the uncontrollable drilling campaign scores of small casinghead gas plants were established. The gas supply has diminished greatly in these districts and many of the organizations are putting in compressors to pull the gas from declining wells by vacuum.

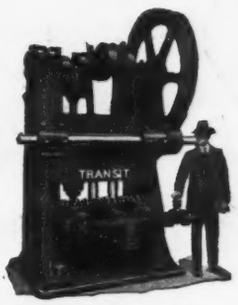
Sales Manager for W. Phillips

TULSA, Dec. 13.—Homer J. Smith has been made sales manager for the Waite Phillips Co., O. L. Cordell, vice president in charge of refinery operations, announced here this week.

Mr. Smith began his new work Dec. 1. Mr. Smith is well known among refiners and marketers in the southwest. Recently he has been in charge of the Sterling Gasoline Corp. stations at Kansas City which were purchased by Waite Phillips. He was manager of the Kansas City division for the Sinclair Refining Co. at one time and previous to that was connected with the Indian Refining Co.

RITTMAN, O., Dec. 12.—B. & W. Oil Co. has begun excavation work on the addition to its service station which it will use for washing, oiling and greasing of cars, according to Robert D. Wenger, partner in the company.

TRANSIT PUMPS



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PIPE LINE, REFINERY, FIELD
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OIL CITY, PA.
District Offices: New York, Philadelphia, Tulsa, Cleveland, Pittsburgh, Houston and Denver

The Uphill Pull—
Or A Downhill Drag?

Which do YOU Have?

Few people like to set up obstacles just for the fun of climbing over them. At least not in the business world.

Building a nice, healthy business is the object of most jobbers and dealers. Handling the wrong petroleum products or dealing with the wrong company, are good ways of making your business an uphill pull.

Why not tie up with a live concern that knows the necessity of selling quality products?

AND

at the same time, furnishes dealer cooperation that really amounts to something?

Drop us a line, or wire at once. We'll be glad to SHOW you what we have.

The Globe Oil & Refining Co.

Manufacturers Petroleum Products
Refinery: Blackwell, Oklahoma
Sales Office: Atlas Life Bldg., Tulsa, Oklahoma

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DECORATE their
"CHRISTMAS TREES"
they usually use
WESTCOTT
VALVES

Appraisal Of Oil And Gas Properties

By Roswell H. Johnson,
Professor Of Oil And Gas Production, University Of Pittsburgh
And
Paul Ruedemann
Appraisal Engineer And Geologist, Gen'l Mgr. Thompson & Black, Tulsa

Chapter XIV

INVESTMENT RISK

Oil or Gas

EXPLANATION of Risk.—The element of risk is involved in the purchase of nearly every oil and gas property whether producing or non-producing. The amount of risk is controlled by the many varying conditions found in the industry. The greater the hazard the more speculative the investment becomes, but the more readily this hazard can be measured, the sounder becomes the investment. It devolves upon every valuation engineer to determine as closely as possible what the risk is and what is the probable error of the results. Of course, with the increase of speculative elements in the valuation, the refinement of the calculation decreases.

Methods of Making Allowances.—In making provisions for risk in valuations, three methods have been employed:

1. Liberal reductions throughout computations.
2. Final redution of valuation by multiplying by a risk factor.
3. By increasing the discount factor being used.

Objections or Advantages of Methods

Method 1. Risk should be considered in the aggregate. If liberal separate reductions have been made throughout the computations the real total amount taken is hidden and may easily be excessive.

Method 2. Risk is provided for by one reduction, namely, that of the final valuation. The deduction should be made by a percentage allowance, as the final valuation is present worth, and a reduction by monetary amount would be incorrect, unless such an amount is the present value of risk allowances.

Method 3. Risk is something which should be compounded annually over the life of the property. The actual per cent of risk thus realized is not determinable until the redemption fund, interest and profit have been segregated from the annuities. Further, if risk is added to the discount factor, the capital returned, (or the redemption fund), will be improved by compound interest annually at the total discount rate used, whereas the interest on the redemption fund would probably be at a different rate.

Factors Determining Well Development Risk.—The fundamental factors in the consideration of risk fall under groups according to the location, nature, status and size of the property, as:

1. Where the property is a long distance from any other development and is only partly developed.
2. Where the property is adjacent to or surrounded by development and is itself undeveloped.
3. Where the property is adjacent to or surrounded by development and is wholly or partly developed.

The speculative element decreases from situation (1) to situation (3), where it is at a minimum.

Of paramount importance in the determination of the allowance for risk are the geological, economic and administrative elements as follows:

A. Geological and historical—
   1. Structural.
      a. Kind and size of structure.
      b. Location of tract thereon.
      c. Structural conditions that are most and least productive in the locality.
      d. Nature of unconformitive above producing sand, if any.
   2. Sands.
      a. Number.
      b. Lenticular or continuous.
      c. Even in texture or irregular.
      d. Porosity.
      e. Thickness.
      f. Depth.
      g. Water.
         1. Water in the producing portion or only in certain areas of the pool.
         2. Reservoir free from water.
   3. Metamorphism.
      a. Fixed carbon ratio of coals.
      b. Other evidences of metamorphism.
      c. Relation of geologic age of (a) to that of producing horizon.
   4. Historical.
      a. Number and history of wells nearby.
         1. Dry holes.
         2. Abandoned wells.
            a. Initial production.
            b. Ultimate production.
         3. Producing wells.
            a. Initial production.
            b. Rate of decline.
            c. Amount of water.
            d. Ultimate production.
            e. Encroachment of water.
            f. Other data.
      b. Amount of developed acreage on the tract.

B. Economic.
   1. Market Conditions.
      a. Decrease in price.
      b. Decrease in demand.
   2. Physical Condition of Equipment.
      a. State of casing and property not visible.
      b. State of visible property.
      c. State of repair.
      d. Care given equipment by management.
   3. Fluctuation in the cost of operating and development.
      a. Lack of labor.
      b. Changing cost of equipment and maintenance repairs.
      c. Error in estimating costs.
      d. Unforseen loss at hole.
   4. Taxes.
      a. Change in local and federal tax rate.
   5. Hidden Liabilities and Title.
      a. Liens.
      b. Unknown mortgages.
      c. Defects of title.
      d. Legislation making title defective.
   6. Contingencies.
      a. Transportation.
      b. Character of competitors.
      c. Governmental regulation on ownership.
      d. Fire, tornado or other fortuitous accidents.

C. Administrative.
   1. Efficiency, integrity and honesty of executives.
   2. Assumption that the plan and scope of the work will not be altered

Careful weighing of all these items will result in a factor which is considered sufficient to compensate in the valuation for the hazard of the venture. The geological factor will, to some extent, follow the theory of probabilities, namely:

1. The probability that, among several equally possible events, a given event will happen, is ratio of the num-

ber of favorable cases to the whole number of possible cases.

2. If the probability that an event will happen is p - , the probability that it will fail is 1 - p.

3. The total probability of an event is equal to the sum of its partial probabilities.

4. The compound probability of two independent events is the product of the probabilities of the two events taken singly.

5. The mathematical expectation is the product of a sum of money, the payment of which depends upon the happening of some event, multiplied by the probability that the event will happen. If $6,000 is offered if one dice comes up three, the mathematical expectation is $1000; if $6000 is offered that the sum of the points coming up on two dice is seven, the mathematical expectation is 6 in 36 or $1000.

Hence, if the net profit expected for one producing well is $100,000, and the chance of getting a well and not a dry hole is 1 in 4, the mathematical expectation is $25,000.

For the economic and administrative portion, business acumen must be the guide in any particular case for the determination of this part of the total risk per cent.

Risk Versus Time.—It goes without saying that risk becomes less toward the end of the life of a producing property, that is, the greater the percentage of capital returned, the less is the amount still at stake. Some companies consider that all the income until the total capital has been returned is return of capital, and the remainder will be profit. This would not require a proportionate annual return of capital but would defer dividends until after the capital had been returned.[1] In a company that is primarily a "wildcatting" company, much is to be said for such an arrangement, but it is not permitted by the Income Tax Regulations and has now been abandoned accordingly.

Risk Versus Size of Company.[2]—"A very large company undergoing many risks would consider this element as nearly negligible; whereas the individual operator of small capital ought to put it quite high. Nevertheless, in any isolated valuation for a big company the risk factor is of prominence equal to that for the small company on the same property. The large company, however, could chance a smaller reduction for risk than the lessor one because of the greater distribution and size of its assets."

Reduction for Risk from Final Valuation.—Upon thorough analysis of the many methods of accounting for risk, it is apparent that the most direct, simplest, and most expedient method is to reduce the final present value by a certain percentage determined for risk. The best form a standpoint of redemption of capital calculations is to reduce the net earnings anticipated for each year by the risk percentage. Either method results in the same answer, and the former procedure requires only one operation.

Determination of Dry Hole Risk.—The dry hole risk in computation depends almost entirely upon the location of the wells for which the factor of risk is desired. If the locations are offsets, then all dry holes that were offsets to producing wells are used to figure the risk. The percentage of these in the total number of such wells completed in the pool establishes the average risk of dry holes for offset locations This average figure can be altered when applied to any location, if it is felt that, because of its geological position on the structure or for other qualifying reasons, the chances are better or worse than for an average location. The "wild cat" risk, that is, the risk in locations distant from producing territory, is also determined as a ratio of failures to the total number of attempts for locations of this type in the region.

When dealing with a large company, where time for an appraisal of considerable refinement is impracticable a general risk factor, made up of the ratio of all dry holes to all holes completed for the company as of each year, and for the total to each year, will suffice. From these data find the percentage of risk for each year and the average percentage for the history of the company to each year. If more information is available from another source, compute a factor of risk for the pool instead of for the company. The yearly risk factors when plotted on graph paper reveal any annual change in the amount of hazard. (See Fig. 31.) In making appraisals of undrilled locations deferred for any considerable time, a postulation of future risk is more accurate than simply applying the average past risk. In general an average risk factor, if applied indiscriminately, should be based on a variety of locations at various distances from production. Whenever possible, a narrower scope of risk factors should be sought. Risk is generally too lightly considered and dealt with arbitrarily, while utmost refinement is employed in some other step of the calculations. Such evasion is carelessness or failure to recognize the relative importance of this element of risk.

Risk of Abandonment.—So called risk of abandonment means the probability of a producing well not yielding the amount anticipated for an average well. Such a risk factor is not pertinent when every producing well is used in the construction of the decline curves and many wells are being appraised. Often smaller wells, or wells that were suddenly abandoned because of water or other trouble or because they were erratic, are omitted from the curve calculation. Thus a curve results comprising wells of better than average production. In such cases to offset the danger of erroneously high valuations, the risk of abandonment ought to be taken into consideration. Any calculation for this risk is more or less arbitrary but is better than a mere guess. The following table of computations for a certain West Virginia pool will be presented first and an explanation later:

	As of 1912	As of 1913	As of 1914	As of 1915	As of 1916
1—Total number of producing wells completed to date	90	93	97	101	102
2—Number of wells abandoned to date	4	8	18	21	24
3—Average total production per well abandoned (bbls.)	16,000	17,000	19,000	20,000	22,000
4—Estimate of average ultimate production for wells producing (bbls.)	42,400	40,800	30,000	36,000	34,200
5—Percentage of 3 to 4	38	42	50	56	64
6—Well equivalent of oil produced by all wells abandoned. (In units of wells.)	1.5	3.3	9.0	11.7	15.4
7—Equivalent of the number of wells abandoned having no production (2-6)	2.5	4.7	9.0	9.3	8.6
8—Percentage of risk of abandonment (7-1)	3	5	9	9	8

Computations of Above

1. All the wells completed as producers in the field as of the end of each year.

2. Total number of wells abandoned to the end of each year.

3. From company records the average total production per well from those abandoned.

4. Estimate of average ultimate production per well as of each year. This is obtained by finding the average recoverable reserves remaining for the producing wells and adding thereto the amount produced in the past. A quicker way would be to find the average initial production in the case of oil; or for gas, either open flow, closed pressure or minute pressure for all wells, and from the composite decline curve for the pool, estimating the probable ultimate yield. The latter process is less accurate.

5. Percentage of the production recovered from the average well abandoned in relation to the average ultimate production of all wells.

6. The percentage in (5) is multiplied by wells abandoned in (2) to obtain the average well equivalent of this production.

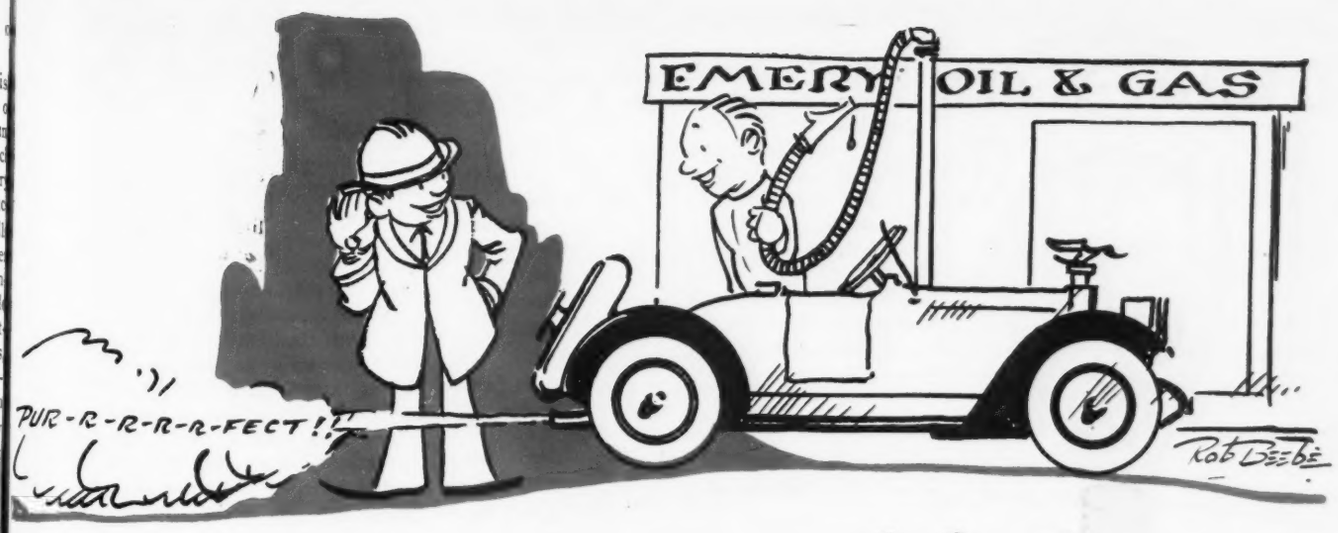
7. By subtraction of well equivalents in (6) from total number abandoned in (2) an estimate of the number of wells that are equivalent to dry holes is found.

8. The number of wells considered as dry holes in (7) is divided by the total number of producers in (1). This is the percentage sought for.

It is recognized that there are a few minor fallacies in the procedure, most

[1]E. C. Graton—Federal Taxation of Mines—Bull., 155, A.I.M.E. 1919. Reference to a similar problem worked out by Dr. J. C. Hance shows that the allowance for risk on this basis is greater than the percentage properly assignable to risk.

[2]R. H. Johnson and L. C. Huntley—Principles of Oil and Gas Production, 1916, p. 235.



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THE motorist of today demands good oil—from all sides he has it dinned into him to insist on this or that brand—he is told he is ruining his car if he doesn't ask for Jones' Oil—or his cylinders will rot if he doesn't use Smith's.

But—here's where the wise Jobber comes in—there are mighty few intelligent buyers that don't know that Pennsylvania Crude is better than all others—and Bradford, Pennsylvania Crude is the best.

Without fear of sincere contradiction we claim **EMERY MOTOR OIL** to be the finest, purest oil made for motor car use.

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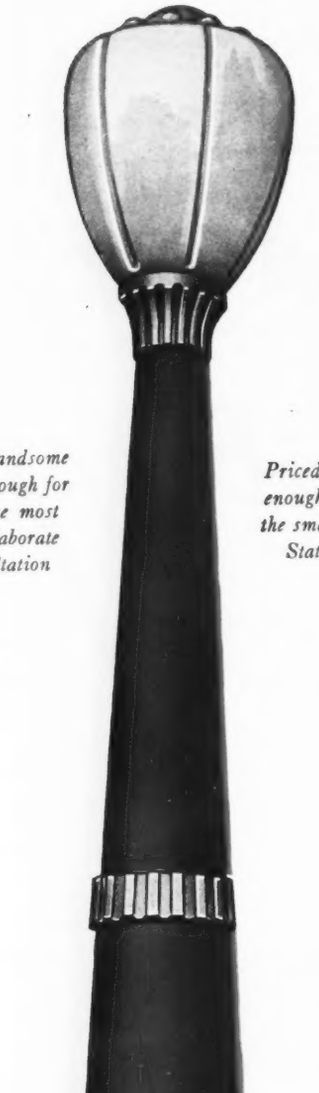

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important of which is the possibility of including in wells abandoned which have had a normal or better than normal life and were abandoned because of age.

This risk factor can be used in connection with the valuation of new wells. As wells become older the risk decreases, in fact if the decline curve indicates a return of fifty percent of the production in one year, the risk is cut in half the second year of the life of the well. For undrilled wells there is the added risk of getting a dry hole.

General Risk.—The company is justified in demanding remuneration for risk on other than the geological and production factors so far allowed for. General risk may be regarded as the factor indirectly affecting appraisals. An outline has been given in which such various economical and administrative risks are shown. No definite method is proposed for computing the hazard under these headings. The investigator will have to be guided by general and qualitative considerations in fixing a suitable percentage.

Accessibility of Reserves.—The distance from transportation lines and a rough topography often delay progress in drilling or construction. Although the expense incident to delay and difficulties can be calculated, many unforeseen inconveniences and expenses are possible in regions of difficult access. Railroad projects may make exploration possible in a region where the cost would otherwise have been prohibitive. Thus mere potential value is changed to a higher potential value and later to a tangible value.

Title of Tract.—Where the title to any leases or other property is not clear, the probable outcome of litigation should be considered. Where contracts have been given for construction or other work all receipts should be checked to avoid filing of liens. There are many cases of leases with doubtful title. Development ought to be suspended in general until a quit claim deed can be obtained from the claimant or a strong legal opinion on the invalidity of their claim be secured. Frequently by legislation or court decision what has hitherto not been considered a defect now becomes one. Owing to the fact that the disputant generally delays making an appearance until the value of the lease has been enhanced sufficiently to make a law suit worth while, it is difficult to express this risk as a percentage, yet such an attempt should be made. One case is known in Oklahoma where the day following the completion of an important discovery well, over twenty applications were made for abstracts of the lease title. Deviously, each of these persons was searching for a cause of legal action against the fortunate owner.

Character of Competitors.—At the distributing point of gas there are frequently several companies with franchises. This is especially true of companies in the larger cities, as for instance in Pittsburgh, Pa., with three large distributing companies and numerous smaller ones in the outlying boroughs and suburbs. Although there is apparently only the closest co-operation and harmony between them, an appraiser for any one must consider the possibility of occasional friction and a consequent miscarriage of plans. The point is emphasized where a large industrial consumer alternates from one company to another to satisfy certain suppose grievances. There can be honest competition and co-operation, but one must

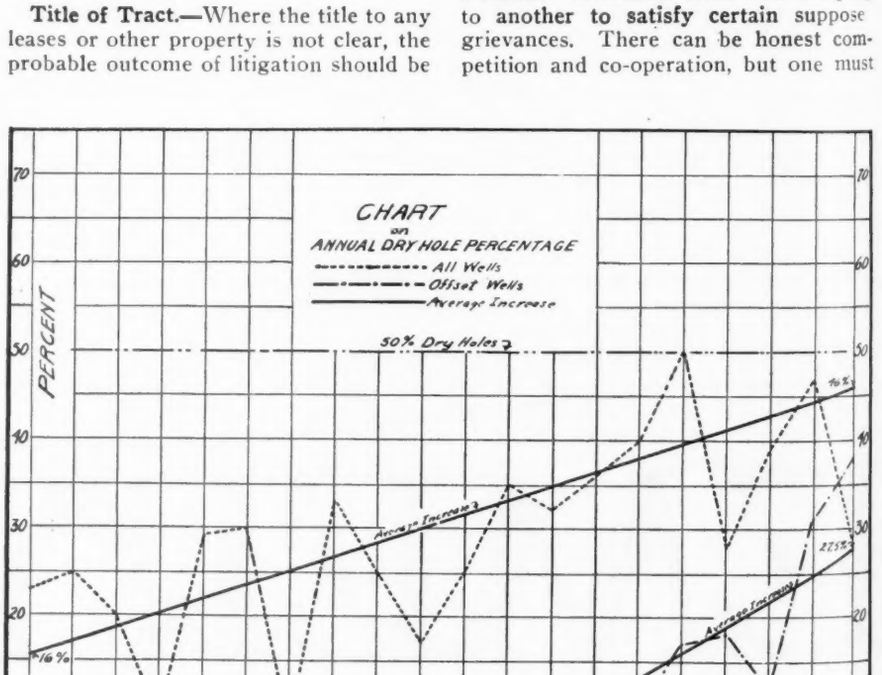

Figure 31.—The increase in percentage of dry holes for one company.. The average increase of all wells if drawn in a curve would show a tendency to flatten in the last few years

always allow for a change of officials, and incidentally a change of policies.

Physical Conditions that Affect Cost.—The difficulty of obtaining and retaining labor in remote regions is probably the most important. Unexpected labor troubles often arise from trivial disputes or dissatisfaction over living conditions. The cost of construction may increase enormously because of a large labor turnover, with its coincident loss of time and disruption of organization. The failure of the management to provide suitable quarters and living conditions often impairs the morale of the men and results in inefficient work. In addition, early frost, a long, cold winter, an excessively wet spring, or summer draught may menace field operations. Abnormal weather conditions, as a rule, increase the cost of development. Such contingencies need to be provided for in any estimate of future costs.

The equipment on a property may be in a poorer condition than is ascertainable by examination. This is especially true of casing and other material hidden from view. Cases have been known where bearing surfaces and other parts of engines were packed with cork to eliminate all vibration and to appear to be in first class condition. This of course, is unusual but demonstrates one of the practices likely to prove disastrous to the purchaser of the property.

Management.—After making plans for future construction and development work and basing the valuation on such plans, provision must be made for the failure of the management to adhere to them. Well locations drilled in places other than originally outlined may demand much greater reductions for risk than has been allowed for. Construction of a gasoline plant may be deferred for several years longer than was estimated. It is necessary that allowance be made for a possible altering of the program. Field superintendents or other men in authority may not carry on the work as efficiently as has been the former policy. On the other hand, it may be carried out more efficiently. In an appraisal it is seldom wise to assume that costs will be cut down. To accomplish this is far more difficult than might be supposed.

Contingencies.—All factors indirectly affecting valuations can be classed in one group and termed "contingencies." For these a lump adjustment by a certain percentage must be made to the final results. The percentage can only be fixed after a thorough study of the possibilities has been analyzed and then only more or less arbitrarily. Investment risk decreases value. On the other hand favorable contingencies may overshadow the unfavorable ones and improve the value.

Gas

There are a few general items comprising general risk for gas companies which are peculiar to that industry.

Future Supply.—A company may have the opportunity, or perhaps the foresight to provide for the purchase of gas when

Don't Spill Alcohol on Radiators

Brookins Liquid Measures are just the thing for filling radiators with denatured alcohol. The flexible metal hose can be inserted in the radiator, so that no alcohol slops over and spoils the finish on the hood. The thumb release gives positive control on the amount of alcohol that goes into the radiator, so that none is wasted.

Hold The Confidence Of Your Customers

When a customer asks for Medium oil, don't pick up a container previously filled, and empty it into his crankcase. He can't be sure that he's getting what he asks for—and no customer likes that.

Draw the oil from a tank that is marked "Medium". Let him see it flow into an open Brookins Measure. Then—without bothering about a funnel—carry it to his car, insert the Brookins flexible, metal nozzle in the oil port, and press the thumb valve. That's all.

You won't spill or waste a drop. You only make one trip for a quart or a gallon. You'll give him quicker service. And he'll know that he's getting what he asks for.

Made in copper finish in one, two, four and five quart sizes.

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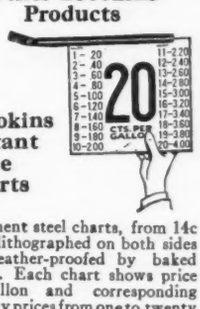
Other Brookins Products



Brookins Instant Price Charts

Permanent steel charts, from 14c to 40c lithographed on both sides and weather-proofed by baked enamel. Each chart shows price per gallon and corresponding quantity prices from one to twenty gallons. Supplied in both even cents and half-cents. Complete price range in each set. Chart fits directly on pump—can be changed instantly. Insures accurate price quotation—eliminates disputes. (Price $7.50 complete).

Brookins Emergency Gas Can

A sturdy two-gallon can, fitted with a flexible metal tube instead of a snout. Carries any distance without spilling. Flexible tube reaches any gasoline intake port without funnel—no spilling, no waste, no danger. An emergency service can that will be appreciated by every customer.

Brookins
SERVICE STATION EQUIPMENT

Here's a Holiday Suggestion!

To help that friend in the correct selection and efficient use of oil products, send him a copy of INDUSTRIAL OIL ENGINEERING by J. R. Battle.

It includes tables, general oil information, engineering and industrial requirements and is of value to oil and lubricating engineers and oil salesmen, as well as being a general reference book.

Your order will be wrapped as a Christmas gift and shipped direct without extra charge, if desired. Just send mailing instructions and check for $10 to

NATIONAL PETROLEUM NEWS
831 Caxton Buiilding Cleveland, Ohio

CUSHING PRODUCTS

OUR own pipe lines.

Our own crude oil production.

Our Company and its Directors own and control a total of 8,000 barrels per day crude production which assures you of your product at all times and regardless of conditions.

In all the past two years our plants have at no time closed operations.

Tie up with a Company that can and will serve you all the time. *Wire, write or telephone.*

Cushing Refining & Gasoline Co.
Cushing, Oklahoma

Refineries
Cushing and Blackwell

Phone 611-606
and LD 7

Rex H. Winget, Gen. Mgr.

YOUR OPPORTUNITY

Where Can You Find A Field As Big—As Profitable?

DISTRIBUTORS WANTED

For The Sale Of The

ROTARY "IDEAL" OIL BURNER

Electric or Water

It's a practical device for installation in coal burning furnaces, permanently displacing coal and it's drudgeries with oil as fuel at a cost less than coal, is built to give continuous satisfaction and gives it with virtually no service, is priced lower than competitive devices due to simplicity, and sells to a market that is almost without limit, every home or building is your prospect, made in correct sizes for heating from 3 rooms to 300.

12 highly rated old established merchants in Phila., alone sell the "Ideal" and are cleaning up.

Connect before your territory is taken.

An interesting proposition awaits your inquiry.

IDEAL ROTARY BURNER COMPANY
21 W. Clark **York, Pa., U. S. A**

its own supply becomes diminished a thereby keep in use the pipe lines t would otherwise be salvaged. Wh this possibility occurs, the transportati and distribution lines and certain oth equipment will have a longer life th was originally expected. On the oth hand, a case less likely to occur, is th of a company with an available mark for over production or an opportuni to secure a new franchise and a ne market, if the supply has permanent increased.

Market.—Like oil wells, the distanc from a line often makes the sale of th product impossible or unprofitable. Is lated gas wells may return no incom whatever because of the cost incident t connecting with a main line. Whethe a company will develop a field of po tential capacity in the hope of attrac ing a purchaser who will build a pip line, or whether the company will dri only enough to insure the success of th line and then build it themselves, wi of course depend on the capital and th market available.

Risk Table for Gas Wells.—A tabl should be made up from various group of wells to show gas, dry hole and aban donment risks. With many small ga companies scattered throughout the ga producing areas, it becomes necessary t use such a table made up of many scat tered wells. However, the amounts ar much too general when using refine ments in methods of appraisal. Suc a table is better when conditions unde which the wells are completed is speci fied. As in the case of oil, at least three divisions should be made as follows:

1. Wells drilled not more than tw locations from the producing well.

2. Wells drilled more than two loca tions from the producing well, but i developed or proven area.

3. Wells in undeveloped or "wil cat" areas.

W. Phillips Buys Tank Cars

TULSA, Dec. 12.—The Waite Phil lips Co. has purchased 150 tank cars fo early 1925 delivery from the Genera American Tank Car Corp. Of tha quantity, 100 are to be of 8,000 gallon capacity and 50 of 10,000 gallons' capaci ty. They will be used to supplemen the Waite Phillips fleet and the flee taken over with the Sterling plant a Wichita which is to be placed in opera tion shortly after Jan. 1.

Phillips Buys Compressors

TULSA, Dec. 12.—Phillips Petroleum Co. has purchased 20 165 h.p. Clark com pressors for installation in its new gas oline plant which is being constructed in the Papoose field near Wetumka. The sale was made through the Gas En gineering & Construction Co., agents for Clark gas engines and compressors in the Mid-Continent.

Limiting Of Stations May Be Vital Topic

By Special Correspondent

WASHINGTON, Dec. 11.—Among both sane and neurotic government officials the time is believed near at hand when the oil industry will be face to face with the question when and how the construction of filling stations can be limited.

In many parts of the country the point of saturation, in both a physical and financial sense is believed to be at hand. For the purpose of comparison it is recalled that just before prohibition came, the brewing interests of the country were fighting with a Frankenstein situation created by themselves, which called for brewery-owned saloons on each of the four corners of street intersections, and the forced feeding of the public with beer to keep them going.

In Washington, right under the noses of officials the establishment of filling stations has reminded them of the work that was done in the matter of establishing saloons by the big breweries.

Under the anti-trust laws it is believed to be extremely doubtful whether the oil industry has the power, by agreement, to limit the construction and operation of refinery-owned filling stations. In the absence of an agreement in the industry it is difficult to think of a method whereby the multiplication of stations can be stopped.

An inkling of how the multiplication might be stopped is contained in the views of Nelson B. Gaskill, a member of the Federal Trade Commission who stands high in the opinion of business.

Commissioner Gaskill recommended to Congress the legalization of "trade practice submittal" conclusions, primarily to the end that the work of the Commission might be lightened through the self-government of business. Giving the conclusions of a trade practice submittal prima facie standing as evidence in a court would reduce the burden and lessening of "external police regulation" which is the euphemstic equivalent of "government meddling."

Answers Are Not Evidence

At present the Federal Trade Commission takes the sense of a given industry by submitting to members of the industry a query as to what it thinks of such and such a practice. The industry may unanimously approve or disapprove the practice but such unanimity has no weight in a court. In case any question arises in a court the Federal Trade Commission has the burden of proving that it is good or bad that such a thing be done by an individual in the trade.

Adoption of Gaskill's suggestion would mean that when such a question came up in a court the burden would be on the person accused of showing that the rule adopted in a trade practice submittal was unjust or illegal. Under

Quicker
Lubricating Service

The Balcrank Chassis Lubricator was designed to enable service stations to render a lubricating service at a profit.

The foot pedal enables the operator to work faster and more efficiently as he does not get tired. In addition, both of his hands are free for attaching the chuck.

It will handle any lubricating system — the change from one system to another requiring but two or three seconds. You cannot give 100% service without it.

Investigation of the Balcrank Chassis Lubricator will change your lubricating from an expensive service to a profitable business.

THE CINCINNATI BALL CRANK CO.
Cincinnati, Ohio

As Important as "Free Air" and more profitable

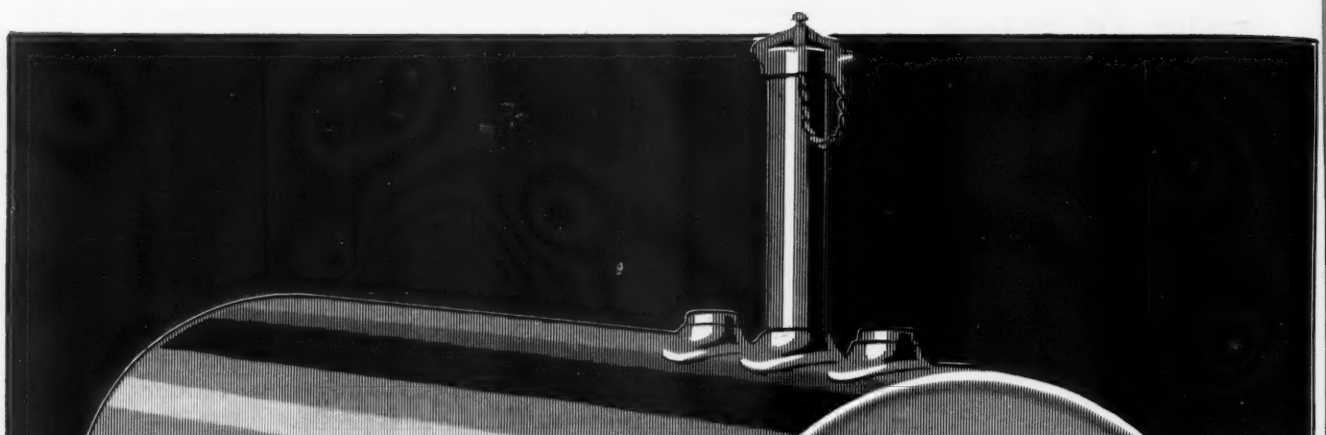
Vogt

Products For The Oil Refiners

We manufacture Paraffine Wax Presses, Distillate Chilling Machines, Stills, Auto Truck Tanks, Special Refinery Equipment, Boilers, Refrigerating Machinery, Drop Forged Steel Valves, and Fittings. Bulletins on request.

Henry Vogt Machine Co.
Incorporated
Louisville, - Ky.

Branch Offices
New York Chicago
Philadelphia Dallas



STORAGE TANKS FOR FURNACE OIL

Best Open Hearth Steel Welded Seams and Flanges Tested Oil Tight

These features of G&B tanks assure a lifetime of economical dependable service in the storage of oil for domestic heating purposes. Tanks carried in stock for immediate shipment range in capacity from 285 to 2000 gallons. Write for prices on the sizes you can use.

GILBERT AND BARKER MANUFACTURING COMPANY

GASOLINE AND OIL STORAGE EQUIPMENT

SPRINGFIELD, MASS., U.S.A.

Conservative estimates indicate that 250,000 homes will be burning oil this winter, meaning a consumption of some 750,000,000 gallons of oil. What will be your share of this business?

a rule of that kind the oil industry could come to an agreement as to what was decent in the matter of building of filling stations and have the rule stand up as law unless or until some one desiring to disregard it could convince the court or courts that it was unjust or illegal.

Unless the Gaskill idea were adopted, the burden of proving that the rule was a good one would be upon the Federal Trade Commission. It would not assume the burden unless it had called a trade practice submittal in the matter. Under the Gaskill proposal, the industry probably could require the Commission to submit the question to the trade and be bound, as to its procedure in court, by the outcome of such a conference of the members of the industry. That point, however, is not exactly covered in the views of Commissioner Gaskill.

Gaskill Stands Alone

The situation in the Commission, as to whether a majority of that body is or is not in sympathy with the majority of the American people, it is suggested, is indicated by the facts about the Gaskill recommendation. They are that he submitted his views to his colleagues for their adoption. They voted against having them made the views of the Commission. Then he asked that his views be sent to Congress along with their report. They also refused to do that. Therefore he did the only thing he could do. He sent his views to Congress. He called them an "individual report and recommendations with reference to possible improvements in the functioning of the Federal Trade Commission." He said it was his purpose to have his report go forward with and as a part of the annual report of the Commission "but the commission ruling otherwise, it becomes necessary to present this report specially."

In its annual report the Commission complained about the size of its tasks in comparison with the size of its appropriations leaving the impression that Congress, in its treatment of the Commission, was somewhat like the Egyptian taskmasters who asked the Israelites to make bricks without straw.

Would Reduce Complaints

Commissioner Gaskill pointed out two ways in which the Commission could reduce the amount of its work, without sacrificing any interest and at the same time improving the Commission's work, The first was to do away with the hundreds of complaints which are filed notwithstanding the willingness of those against whom the complaints are filed to quit the practice about which complaint is made, without any fight at all. Gaskill contended that in such cases the willingness of the respondent to quit the so-called unfair practice should be made a matter of record and available for use gainst the respondent in the event he did not quit as he had promised. The Commission, for a while followed that practice but

NIAGARA OIL
METERS

They automatically measure and register any oil product that is pumped or that flows by gravity in a pipe or a hose. Many in use by refineries, jobbers and retailers.

Write for prices, testimonials and illustrated catalog.

BUFFALO METER CO.
Est. 1892
2889 Main St., Buffalo, N. Y.

GULF
Refining
Company

General Sales Offices
PITTSBURGH, PA.
District Sales Offices
New York, Houston, Atlanta, Boston, New Orleans, Tampa, Philadelphia

REFINERS OF OKLAHOMA
TEXAS AND LOUISIANA

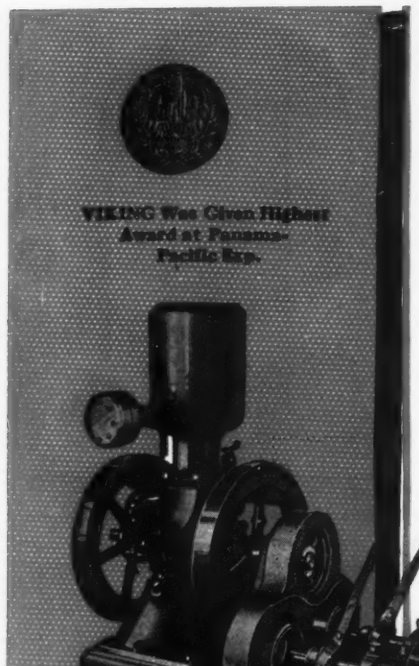
PETROLEUM

REFINED OIL
GASOLINE
NAPHTHA
GAS OILS
PARAFFINE WAX
ASPHALT

Fuel Oil--Lubricating Oils

CYLINDER ENGINE
CORDAGE

RED AND PALE PARAFFINE OILS



Improved Pumping Principle

The twenty-five thousand VIKING pumps, in use today in every state in the Union, prove that here is an improved principle in pump design that fills a tremendous need.

It is a powerful pump with a capacity of *ninety gallons a minute.*

It possesses the outstanding feature of the positive elimination of all possiblity of leakage. In fact, the VIKING is *guaranteed to not leak.*

The VIKING Twin model consists of two pumps mounted on the same base, each controlled by a friction clutch. Two different kinds or grades of fuel oil can be handled.

The VIKING is the simplest pump on the market. There are but two moving parts, no valves, no springs or other fittings to wear, get out of order or cause trouble.

An unusually small power plant with consequent small cost of operation is required considering the capacity.

The unique design of the VIKING is completely described in the catalog. Write for a copy TODAY.

VIKING PUMP CO., Cedar Falls, Ia.

B. F. Schirmer Co.	342 Madison Ave., New York City
Schirmer Co.	Finance Bldg., Cleveland, Ohio
Viking Pump Co.	549 W. Washington Blvd., Chicago, Ill.
Norton Paper Goods Co.	719 Delaware St., Kansas City, Mo.
Viking Pump Sales Co.	204 Grand Ave., Milwaukee, Wisc.
Walter O'Bannon Co.	519-21 E. First St., Tulsa, Okla.
Southern Engine & Pump Co.	Houston, Texas
Menge Pump & Mach. Co.	862 Tchoupitoulas St., New Orleans, La.
De Laval Pacific Co.	61 Beale St., San Francisco, Calif.

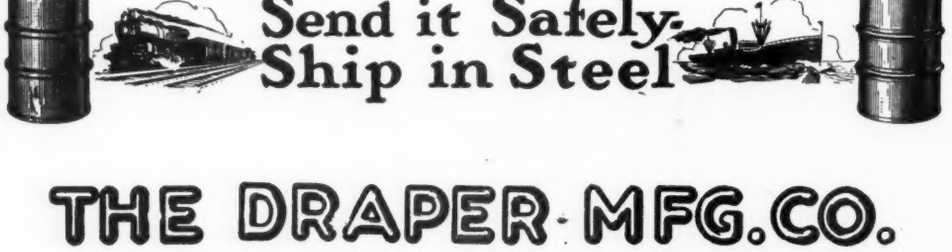
VIKING PUMPS

Important Announcement

Please Note Our New York Sales Office Is Now At

11 Broadway

Room 1111 *Telephone:* Bowling Green 7716



THE DRAPER MFG. CO.

East 91st St. & Crane Ave. Cleveland, Ohio

District Sales Offices:

NEW YORK: 11 Broadway (Bowling Green Bldg.) Room 1111
CHICAGO: 644 West Washington St., Amco Sales Corp.
NEW ORLEANS: 206 Eureka Bldg.; E. J. Putzell
SAN FRANCISCO: 149 California St.; K. M. Reid

quit it. Gaskill suggested that use of that method should be required and hedged about with law so that use of that policy would not depend upon the vote of the majority.

The second way for getting along with less money and at the same time improving conditions in business was the legalization of the trade submittal conclusions as hereinbefore set forth.

In three places the Commission, in its annual report calls attention to the fact that it submitted, in June, a report on the so-called sharp rise in the price of gasoline but that neither the President nor the Department of Justice has made it public. In one of its references it said it asked Congress for money for making the investigation into gasoline requested by President Coolidge last February but that Congress did not give it any. It said it met the wishes of the President by taking its staff from other work and putting it on the investigation which the President asked on account of the charges made by Governor McMaster, who, at the November election, was sent to the Senate.

The inference might be drawn, from the reference to that report and its non-publication, that the Commission thinks it did a fine bit of work the value of which was being hidden by the President's failure to make it public.

Michigan Has New Marketer

MUSKEGON HEIGHTS, MICH., Dec. 11.—A newly-organized company here, capitalized at $15,000 and known as the Broadway Oil Co., elected at a recent stockholders' meeting the following officers and directors: George B. Gelakoski, president; G. A. Knapp, vice president; F. A. Young, secretary-treasurer. Besides Messrs. Gelakoski, Knapp, and Young, those elected to serve on the board of directors include also Abram Hartsema and A. L. Nielsen.

Mr. Young, who is also manager of the new company, was for four years manager of the Muskegon Co-Operative Oil Co.

One service station has been completed since the company entered the oil business and another one is being built. Tanks with a total capacity of 60,000 gallons have been installed. One tank truck is making deliveries and another one is expected to be in operation on Dec. 1.

The company is distributor of Texaco products.

Gleeson Back as Marketer

FORT WORTH, Dec. 11.—George P. Gleeson has re-entered the marketing business in north Texas, he announced this week. He has organized a marketing company which will be known as George P. Gleeson, Inc., and opened offices in the Fort Worth Club building. M. J. Sutphin, formerly assistant sales manager of the Imperial Oil Marketing Co., is to be sales manager of the new company.

Catch Their Eye *Before* They Drive By—

YOU'VE driven—you know how easy it is to drive past a filling station when you don't see it in time.

Get their attention a block or two before they get to your station, and you'll get more business.

Erect a distinctive Federal Electric Sign without delay. It's getting dark earlier now—be prepared.

Blaze your trademark

in letters of fire so no one will miss your location

Our Manufacturers' Service Representatives have all the data and can explain the plan in a few moments. Write, wire or phone us today—it won't obligate you—you owe it to your Company to learn the facts—NOW.

FEDERAL ELECTRIC COMPANY

Electrical Sign Service Division

8760 South State Street, CHICAGO, ILL.

A FEDERAL ELECTRIC SIGN IS THE CAUSE OF A BUSY STATION—NOT THE RESULT

COUPON BOOKS

of Every Description

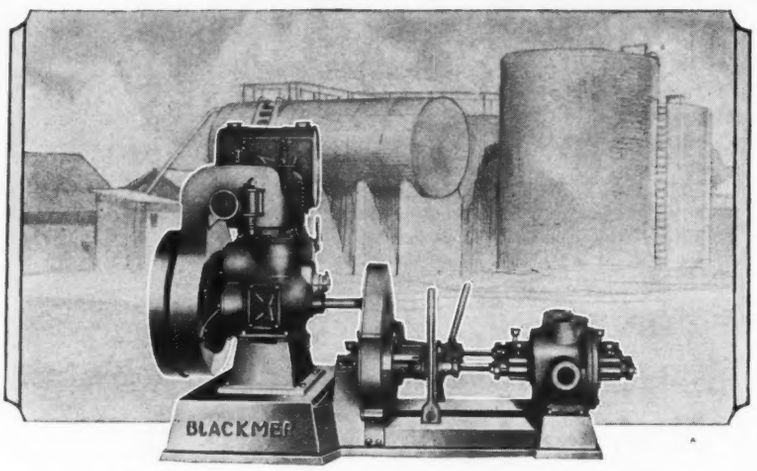
for the Filling Station

We will gladly send samples and prices upon request

Allison Coupon Co.

Indianapolis Indiana

BLACKMER ROTARY PUMPS



They Wear In—Not Out

The Blackmer principle of operation enables the Blackmer Rotary Pump to take up its own wear. This insures a continued and even wearing-in of parts, eliminating slippage and loss of efficiency. It makes replacement of parts practically negligible, and thus effects a very low, fixed, operating cost. The principle of working adjustment is proved correct by twenty years of satisfactory operation by Blackmer owners.

The Standard Double Unit, pictures above, is specially suited to meet the needs of bulk distributing stations.

This new double unit has been standardized to profit by the economies of large quantity production, making possible a reduced price. The high standard of Blackmer quality remains unchanged.

It consists of two 100 G. P. M. Blackmer Pumps, mounted with clutches, on an extra heavy, cast iron base, with or without space for a firewall.

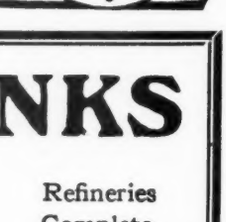
It is equipped with either of three types of power units. Electric unit will accommodate 1800 speed motor, 2 to 5 H. P. Engine unit includes Novo engine of 2 to 4 H. P., or New-Way air-cooled 3 to 5 H. P.

Built for long service and subjected to the same rigid tests which all Blackmers must pass, this new model will deliver its rated gallonage, year after year, with scarcely perceptible drop in efficiency.

We continue to build pumps to specifications when desired. Our engineers are always ready to serve you on any pumping problems.

Write our nearest branch office for catalog and prices.

BLACKMER ROTARY PUMP Co.
Petoskey, Mich.
Offices in nineteen principal cities



STATION TANKS

Field	10,000 gals.	in stock	Refineries
Storage	12,000 "		Complete
	20,000 "		

Immense Stocks ***Immediate shipment***

We have been in the business since 1871 and fully understand your requirements. Wire, write or phone your inquiries.

The Reeves Brothers Company
Alliance, Ohio

Pan-American Entering San Francisco Market

LOS ANGELES, Dec. 11.—Elaborate preparations are being made by the Pan-American Petroleum Co. to retail gasoline and oils in the San Francisco bay district during the next few months, according to J. C. Anderson, president of the company.

The Doheny organization has already purchased a tract in Oakland for $150,000 and is negotiating for one in San Francisco at a reported consideration of $250,000. Mr. Anderson said the company was actively engaged in picking up such parcels of lands as it would need in the bay district and that it would get into the retail business there as quickly as possible.

Just how elaborate this program would be, Mr. Anderson said he was not prepared to state, but it would start with several service stations in San Francisco and Oakland together with oil storage depots, tank trucks fleets and other necessary equipment and will be broadened as rapidly as the business justified.

Several months ago the Pan American entered the service station business in Los Angeles after having started the business in New Orleans. In Los Angeles the company began with 21 stations and now has about 40. The San Francisco bay district will give the Doheny company a much bigger outlet for its Los Angeles harbor refinery which was built last year at a cost of approximately $20,0000,000.

The fact that the General Petroleum Corp. recently announced it would carry its service station program from Seattle and Portland to Oakland and San Francisco is believed to have hastened somewhat the Pan American's entering that field although its ultimate entrance has long been regarded as a natural and logical outcome of its Pacific coast retail business program.

Hall Oil Products Co. Expands

WAUSAU, WIS., Dec. 11.—Hall Oil Products Co., a subsidiary of the Hall Garage, has completed a bulk station at Athens, Wis., which is equipped with three 1500 gallons storage tanks. The company recently completed a service a service station there which cost approximately $10,000. It has two pumps, air service, drain pit, women's rest room and other conveniences. One truck is being operated at present, but plans are to have two others in service in the spring, George Carver, manager of the bulk stations says.

LOS ANGELES, Dec. 11.—Charles J. Kay, Southern California district manager; and R. I. Loudon, sales supervisor for that district, for the Tide Water Oil Sales Corp., went to San Francisco to attend the annual convention of that organization, in the Hotel Whitcomb, December 8 to 10 inclusive.

ON THE LAZY BENCH

Grabbing a Bargain

An ancient car chugged painfully up to the gates of the races. The gatekeeper, demanding the usual fee for automobiles, called, "A dollar for the car!"

The owner looked up with a pathetic smile of relief. "Sold" he said.

—Wayne Winner

◈ ◈ ◈

Absolutely

Doctor: "Are you sure you are especially careful to keep this disease from spreading to your other children?"

Mrs. Blank: "Oh, yes, indeed, doctor. I bought a sanitary drinking cup and I'm making every last one of them use it."

—The Booster

◈ ◈ ◈

Save the Surface

The color blooms on a woman's cheek,
For less than fifteen cents a week;
But for a man, as price now goes,
It costs a lot to paint a nose.

—Illinois Oil Co. Review

◈ ◈ ◈

Wine and Women

Freshman (to fraternity brother): "Someone wants you on the phone."

Fraternity Brother: "Well, if it's a girl, tell her I'll be there, and if it's a man, tell him I'll take a pint."

—Mutual Oildex

◈ ◈ ◈

Dear little Maude awoke about two o'clock the other morning and asked her mamma to tell her a fairy tale.

"It's too late, darling," mamma replied. "Daddy will be in shortly, and he'll tell us both one."

—Hawkeye Gusher

◈ ◈ ◈

Saves Electricity, Too

Him: "How is it that Philip never takes you to the theatre any more?"

Her: "Well, you see, one evening it rained and we sat in the parlor."

—Mutual Oildex

◈ ◈ ◈

Wife—But Jack, I haven't a thing to wear.

Jack—That's all right, we'll use the closed car.

—Illinois Oil Co. Review

◈ ◈ ◈

Oils well that ends well if it oil ends in an oil well.

—Bridgeport Driller

Granted

Wifie (in a huff)—"Oh, you needn't thing you are so wonderful. The night you proposed to me you looked absolutely silly."

Hubby—"A coincidence. The fact is I was absolutely silly."

—Wayne Winner

◈ ◈ ◈

This One May Come In Handy

Ruby—"Tell me, have you ever loved another."

Spike—"Why, yes, of course dear. Do you think I'd practice on a nice girl like you?"

—Illinois Oil Co. Review

◈ ◈ ◈

"I don't like your heart action," the doctor said, applying the stethoscope again. "You have had some trouble with agina pectoris, haven't you?"

"You're right, in a way, doctor," said the young man sheepishly, "only that isn't her name."

—Mutual Oildex

◈ ◈ ◈

"Will you go to the dance with me tonight?"

"I'd like to, but my trunks have not arrived."

"Oh, it isn't that kind of a dance."

—Illinois Oil Co. Review

◈ ◈ ◈

Contractor: "Don't you see that sign, 'No Work Today'?"

Colored Applicant: "Yassuh, dass why ah applied!"

—Magnolia Oil News

◈ ◈ ◈

Not Any More

Breathes there a girl with soul so dead,
Who never to her sheik hath said:
"Where do we eat?"

—Wayne Winner

◈ ◈ ◈

Quite So

"I'm cutting quite a figure," said the chorus girl, as she sat on a broken bottle.

—Wayne Winner

◈ ◈ ◈

My Bonnie bent over the gas tank,
The height of its contents to see;
She lighted a match to assist her—
Oh, bring back my Bonnie to me.

—Hawkeye Gusher

◈ ◈ ◈

Owner of Second-hand Two-seater: Well, good-bye, old bean—in case she starts.

—Magnolia Oil News

The Best Gift of All

THE *ideal* gift from the Oil Company to its salesmen, a gift that will create good-will, strengthen the morale, show the samples to best possible advantage, and boost sales!

Any Salesman would be tickled to death to get a convenient, efficient L-U-C-E Display Case on Christmas Day. It is a gift that he will be proud of, a gift that he can put to best possible use in 1925.

The L-U-C-E 301 Combination Portfolio and Display Case shown below will make every one of your Salesmen proud of the Firm he works for, and proud of the samples he carries. Their name may be embossed in Gold, if desired, without charge. Closed, this heavy, 5 oz. black cowhide case makes a favorable, lasting impression on your customers.

Open, however, it is an efficient, attractive Display Case, containing 18 four ounce cut-bottom bottles with metal capped corks, and 6 one ounce squat grease jars. There are no trays to lift out, no metal clips to break the bottles. The flaps are lined with washable Keratol, and the samples backed against red plush. There is also an ample pocket for order book and literature.

301 Combination Folio complete. There is a 10% Cash Discount as well as special quantity discounts. Satisfaction is guaranteed. **$24.00**

Send for our new Catalog of L-U-C-E Gift Luggage.

L-U-C-E

Builders of Sales Luggage

614 Delaware KANSAS CITY, MO.

GREETINGS

Merry Christmas to all men—and a prosperous New Year for the Independent Jobber—

LUBRICATING OILS

Deepwater Oil Refineries

The Independent Jobber's Refiner

HOUSTON-TEXAS

REFINERY-TANK WAGON MARKETS

Gasoline Market Quieter; Brokers Seek Outlet For Purchases

Staff Special

TULSA, Dec. 13

MID-CONTINENT gasoline markets have been quieter during the second week in December, showing a reaction from the tremendously strong market of the previous week. Kerosene is still featureless, although distillates have been selling with greater ease. Fuel and gas oils have been relatively quiet without material price change.

The gasoline market has been largely dominated by brokers this week. Last week it was pointed out that brokers had been heavy buyers of gasoline for future delivery at the beginning of the month and that they were scrambling to find an outlet for all of the material on their books.

This situation has been intensified during the past few days. Brokers have been lowering their prices to get business in an effort to save part of the paper profit which has been built up by the market since the first of the month. Today one broker was offering 25 cars of U. S. Motor gasoline for immediate delivery at 8¼ cents per gallon.

Forced to Make Sale

This price was ½ cent below the general asking price of refiners and ¾ cent below the price demanded by some of the larger operators. The low price was made by the broker for immediate shipment only, indicating that a sale had to be made at once or the refiner would cancel the order.

Generally speaking, brokers are not cutting their prices below 8½ cents per gallon and they have been fairly successful in moving most of the gasoline they had bought ahead.

Jobbers Buying Less

Jobbers have generally withdrawn from the market except for such gasoline as they need immediately. Weather conditions have been less favorable and consumer demand is consequently less keen than it has been in recent weeks. One refiner talked with more than a dozen scattered jobbers during the week and in every case was told that the markets were too high for speculative buying and that immediate demands did not warrant purchases at this time.

Undoubtedly jobbers are in a tight position in a large part of the consuming territory drawing on the Mid-Continent. Tank wagon prices averaging only a trifle above 13 cents per gallon do not permit a profit when the jobber must pay 8½ to 8¾ cents per gallon for U. S. Motor gasoline. In a large part of the territory jobbers are showing a loss on current operations.

In the long run, narrow margins between tank car and tank wagon prices will have a good effect since it will discourage the expansion of distributing facilities, nevertheless the narrow margins will restrict buying for the time being and tend to keep refinery markets from rapid advances.

Export Buying Slower

Exporters have shown only a passive interest in the market during the past week. In Oklahoma, refiners are without stocks of high gravity gasoline and exporters have not been willing to offer higher prices to induce refiners to make the lighter material. In Texas, refiners are sold up on their current production of 64-66, 375 end point gasoline and have had a good demand from large companies for U. S. Motor to be shipped both to export and to local stations. Little U. S. Motor has moved out of Oklahoma into export channels.

If exporters should desire any considerable quantity of gasoline of any grade they would have difficulty in making purchases. Stocks at Mid-Continent plants are extremely low and many plants have sold a major part of their production for December. As was mentioned above, the lower gasoline prices prevailing today are largely the result of the activity of brokers. Export buying would quickly absorb any surplus in the market and cause another tight situation.

Gasoline Stock Reduced

In its survey of refining operations in the Mid-Continent field for the week ended Dec. 5, this publication received reports from 117 companies with a daily still capacity of 434,000 barrels. Reports showed shipments of 25,842,363 gallons of gasoline during the week and production of 24,955,801 gallons causing a reduction in stocks of nearly a million gallons to a total of 50,568,135 gallons. At the rate of movement maintained during the week, stocks represented only 14 days' supply.

The situation shown by weekly surveys made by this publication is likewise reflected in the report of the Bureau of Mines for October. At all plants in Oklahoma and Kansas on Nov. 1, the bureau showed total gasoline stocks of only 107,337,922 gallons which is only about 40 per cent of the stocks held by manufacturers in the two states at the opening of the gasoline season.

November consumption was maintained at a high rate and undoubtedly the government bureau will report a further reduction of stocks when it issues its figures for that month. In the accompanying table is an estimate of production and consumption of gasoline throughout the United States for November with estimated stocks as of Dec. 1.

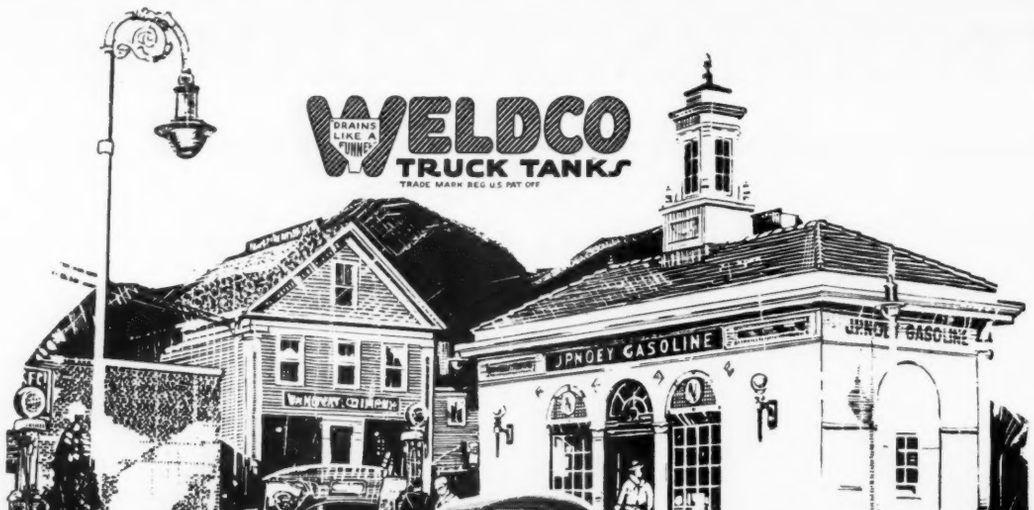
The estimate is made on the basis of normal domestic consumption based on

(Continue on page 117)

Mid-Continent Refinery Operations Week Ending Dec. 5

As Compiled by National Petroleum News

	Kansas	Oklahoma	N.& C.Texas	N.La.-Ark.	Total
Plants Reporting	21	44	38	14	117
Da. Still Capacity (Bbls.)	95,700	154,400	134,000	49,900	434,000
Da. Aver. Crude Run (Bbls.)	48,292	84,103	59,462	35,117	226,974
Da. Aver. Other Oils (Bbls.)	8,890	11,156	8,233	7,337	35,616
Total Run to Stills	57,182	95,259	67,695	42,454	262,590
GASOLINE—Gallons					
Stocks Nov. 28	6,093,731	30,328,763	10,845,177	4,187,026	51,454,697
Prod. 11-28—12-5	6,133,708	9,643,551	7,021,086	2,157,456	24,955,801
Ship. 11-28—12-5	5,851,410	11,317,105	6,595,726	2,078,122	25,842,363
Stocks Dec. 5	6,376,029	28,655,209	11,270,537	4,266,360	60,568,135
Ratio Sales to Prod	95.4%	117.4%	93.9%	96.3%	103.6%
KEROSENE—Gallons					
Stocks Nov. 28	7,429,334	8,138,382	6,268,801	846,088	22,682,605
Prod. 11-28—12-5	1,483,462	2,915,662	1,696,637	535,264	6,631,025
Ship. 11-28—12-5	2,607,458	2,683,533	2,114,052	777,438	8,182,481
Stocks Dec. 5	6,305,338	8,370,511	5,851,386	603,914	21,131,149
Ratio Sales to Prod	175.8%	92.0%	124.6%	145.2%	123.4%
GAS AND FUEL OIL —Gallons					
Stocks Nov. 28	13,504,392	65,110,682	33,787,489	18,184,416	130,586,979
Prod. 11-28—12-5	5,738,291	11,629,378	8,833,614	8,206,951	34,408,234
Ship. 11-28—12-5	6,646,899	13,265,821	8,554,138	7,947,447	36,414,305
Stocks Dec. 5	12,595,784	63,474,239	34,666,965	18,443,920	128,580,908
Ratio Sales to Prod	115.8%	114.1%	96.8%	96.8%	105.8%



Why Spend All On Filling Station Architecture?

There seems to be universal competition to outdo the other fellow in architectural beauty of filling stations. Too many operators are overlooking the capital that exists in their truck tank equipment. Forlorn looking truck tanks in front of $10,000 stations is business inconsistency.

The auto owning public will have greater respect for your product if it reads your name on truck tanks that unconsciously form quality opinions. The difference in the purchase price of an ordinary tank and a Weldco is a negligent quantity to consider. First of all you receive the exclusive Weldco funnel drain, assuring full measure to your trade. And then there's the distinguishing appearance and the quality of construction that are everlasting investments.

Our booklet, "What To Consider When Buying A Truck Tank" will be mailed free on request. Write for it today!

The Youngstown Welding Company

530 Rayen Ave., Youngstown, Ohio

Welders Since 1912

Refinery Markets on Light Oils and Lubricants

Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas, California

GASOLINE AND NAPTHA

	Prices Dec. 15	Prices Dec. 8	Prices Dec. 1
PENNSYLVANIA			
52-54 Naptha	-10½	-10¾	-10¾
54-56 Naptha	-10¾	10¾-11	-11
58-60 Gasoline	11 -11½	11¼-11½	11 -11¼
60-62 Straight-run gasoline	12 -12½	12¼-12½	12 -12¼
62-64 Straight-run gasoline	13 -13½	13¼-13½	13¼-13½
64-66 Straight-run gasoline	14 -14½	14½-15	-14½
68-70 Straight-run gasoline	18½-19	18½-19½	18½-19
OKLAHOMA			
48-50 450 E. P. naptha	- 7½	7½- 7¾	7½- 7¾
50-52 450 E. P. naptha	7¾- 8	7¾- 8	7¾- 8
56-58 450 E. P. gasoline	8¼ 8½	8½ 8¾	- 8¼
58-60 U.S.Motor 437 E.P.131 i.b.p.	8½ 8¾	8¾- 9	- 8½
60-62 400 E. P. gasoline	9⅛ 9⅞	9¾-10	9¾ 10
64-66 375 E. P. gasoline	11¼ 11½	-11½	-11¼
68-70 350 E. P. gasoline	12 -12¼	12 -12¼	11¾-12
NORTH TEXAS			
48-52 450 E. P. naptha	7¾- 8	7¾- 8	7¾- 8
56-58 450 E. P. gasoline	8¼ 8½	8½- 8¾	8¼- 8⅜
58-60 450 E. P. gasoline	8⅜ 8½	- 9	8½- 8⅝
58-60 U. S. Motor gasoline	8½- 8¾	- 9¼	- 8¾
60-62 400 E. P. gasoline	- 10	10 -10¾	-10
64-66 390 E. P. gasoline	11 -11¼	-11¼	-11
64-66 375 E. P. gasoline	11¼-11½	-11½	11¼-11½
68-70 350 E. P. gasoline	12 -12¼	12 -12¼	11¾-12
NORTH LOUISIANA			
58-60 450 E. P. gasoline	9 - 9¼	9 - 9¼	8½- 8¾
58-60 437 U. S. Motor Gasoline	9¼- 9¾	9¼- 9½	8¾- 9
64-66 390-400 E. P. gasoline	11⅝-11⅞	11⅝-11⅞	11¼ 11½
64-66 375 E. P. gasoline	11⅞-12⅛	11⅞-12⅛	11½-11¾
ARKANSAS			
58-60 450 E. P. gasoline	- 8¾	9 - 9¼	8½- 8¾
58-60 U. S.Motor gasoline	- 9	9¼- 9½	8¾- 9
64-66 375 E. P. gasoline	11½-11¾	11¾ 12	11½-11¾
CALIFORNIA			
54-56 U. S. Motor gasoline	- 9	- 9	9

Note: This is without the 2-cent state tax included in the price by California refiners for shipments within the state.

NATURAL GASOLINE

OKLAHOMA			
Grade Double A	- 9	9 - 9¼	- 9
Grade A	- 9	9 - 9¼	- 9
Grade Double B	- 8¾	- 8¾	- 8¾
Grade B	- 8¾	- 8¾	- 8¾
Grade C	8¼- 8½	- 8½	- 8½

NOTE.—Specifications adopted by Ass'n of Nat. Gaso. Manufacturers:
Grade Double A.—80-87.9 gravity, 90% recovery, not over 375 E.P.
Grade A.—72-79.9 gravity, 90% recovery, not over 375 E. P.
Grade Double B.—84-92 gravity, 85% recovery, not over 375 E. P.
Grade B.—76-83.9 gravity, 85% recovery, not over 375 E. P.
Grade C.—80-90 gravity, 78% recovery, not over 375 E. P

NORTH TEXAS			
*Grade Double A	8¾ 9	- 9	8¾- 9
*Grade A	8¾- 9	- 9	8¾- 9
*Grade Double B	8½- 8¾	- 8¾	- 8¾
*Grade B	- 8¾	- 8¾	- 8¾
Grade C	8¼- 8½	- 8½	- 8½
*F. O. B. Breckenridge			
CALIFORNIA			
73-78 375 E. P.	-12	-11	-11
OKLAHOMA NATURAL GASOLINE—BLENDS			
64-66 435-440 E. P.	8¾- 9	8¾- 9	8½- 9
NORTH TEXAS			
64-66 435-440 E. P.	8¾- 9	8¾- 9	8¾- 9
PENNSYLVANIA			
68-70 Grav. 437 E. P.	12¼-12½	12¼-12½	12¼-12½
64-66 Grav. 437 E. P.	12 -12½	12 -12¼	12 -12¼
60-62 Grav. 437 E.P.	11½-11¾	11½-11¾	11¾-11½
68-70 Grav. 420 E. P.	13 -13½	13 -13½	13 -13½
68-70 Grav. 400 E.P.	14 -14½	14 -14½	14 -14½

BURNING OILS

PENNSYLVANIA			
45 Water White Kerosone	7¼- 7½	7¾- 7½	- 7½
46 Water White Kerosene	7¾- 8	7¾- 8	7¾- 8
47 Water White Kerosene	8½- 8¾	8½- 8¾	8½- 8¾
300 Burning Oil	- 7¾	- 7¾	- 7¾
OKLAHOMA			
40-42 Prime White Distillate	4 - 4¼	4 - 4¼	4 - 4¼
41-43 Water White Kerosene	4¼- 4½	4¼- 4½	4¼- 4½
42-44 Water White Kerosene	4½- 4¾	4½- 4¾	4½- 4¾
NORTH TEXAS			
41-43 Water White Kerosene	4¼- 4½	4¼- 4½	4¼- 4½
42-44 Water White Kerosene	4½- 4¾	4½- 4¾	4½- 4¾
NORTH LOUISIANA			
41-43 Water White Kerosene	4¾- 5¼	4¾- 5	4¾- 4¾
ARKANSAS			
41-43 Water White Kerosene	5¼- 5½	5¼- 5½	5 - 5¼
42-44 Water White Kerosene	5½- 5¾	5½- 5¾	5¼ 5½
CALIFORNIA			
40-42 Water White Kerosene	-14	-14	-14

NEUTRAL OILS

	Prices Dec. 15	Prices Dec. 8	Prices Dec. 1
PENNSYLVANIA			
(Viscosity at 70°F.)			
220 Vis. No. 3 Assoc. Filt.	-27½	-27½	-27
200 Vis. No. 3 Assoc. Filt.	25 -25½	25 -25½	24½-25
180 Vis. No. 3 Assoc. Filt.	23 -23½	23 -23½	22 -22½
150 Vis. No. 3 Assoc. Filt.	-21	20 -21	-20
(Non-Viscous)			
34 Grav., 350-360 Flash	8 - 8½	8 - 8½	- 7½
36 Miners Neutrals 300-305 Flash	7¼- 7½	7¼- 7½	- 7
OKLAHOMA			
(Viscosity at 100° F.)			
70 Vis. No. 2½-3 color	4½- 4½	4½- 4½	4¼- 4⅜
100 Vis. No. 2 color	4¾- 5	4¾- 5	4¾- 5
100 Vis. No. 2½-3 color	4¼- 4½	4¼- 4½	4¼- 4½
150 Vis. No. 3 color	7¼- 7½	7¼- 7½	7¼- 7½
150 Vis. No. 4 color	6¾- 7	6¾- 7	6¾- 7
180 Vis. No. 3 color	8¾- 9	8¾- 9	8¾- 9
180 Vis. No. 4 color	8¼- 8¾	8¼- 8½	8¼- 8¾
180 Vis. No. 5 color	7¾- 8	7¾- 8	7¾- 8
200 Vis. No. 3 color	10¼-10¾	10¼-10¾	10¼-10¾
200 Vis. No. 4 color	9¾-10	9¾-10	9¾-10
200 Vis. No. 5 color	9¼- 9½	9¼- 9½	9¼- 9½
220 Vis. No. 3 color	11¾-12	11¾-12	11¾-12
220 Vis. No. 4 color	11 -11¼	11 -11¼	11 -11¼
220 Vis. No. 5 color	10¼-10½	10¼-10½	10¼-10½
240 Vis. No. 3 color	13¾-14	13¾-14	13¾-14
240 Vis. No. 4 color	13 -13¼	13 -13¼	13 -13¼
240 Vis. No. 5 color	12¼-12½	12¼-12½	12¼-12½
280 Vis. No. 3 color	16½-17	16½-17	16½-17
280 Vis. No. 4 color	15¼-15½	15¼-15½	15¼-15½
280 Vis. No. 5 color	13¾-14	13¾-14	13¾-14
300 Vis. No. 5-6 color	16¾-17	17 -17½	16¾-17
GULF COASTAL			
(Viscosity at 100°F; cold test 0)			
100 Vis. No. 2 Color Unfilt. Pale	8¾- 9	8¾- 9	8½- 9
200 Vis. No. 3 Color Unfilt. Pale	13 -14	13 -14	13 -14
300 Vis. No. 3 Color Unfilt. Pale	15½-16	15½-16	15½-16
500 Vis. No.3½ Color Unfilt. Pale	17½-18	17½-18	17½-18
750 Vis. No. 4 Color Unfilt. Pale	22½-23½	22½-23½	22½-23½
200 Vis. No. 2 Color Filt. Pale	22 -23	22 -23	22 -23
300 Vis. No. 2 Color Filt. Pale	25½-26½	25½-26½	25½-26½
500 Vis. No. 2½ Color Filt. Pale	29½-30½	29½-30½	29½-30½
750 Vis. No.2½ Color Filt. Pale	39½-40½	39½-40½	39½-40½
200 Vis. No.5½ Color Red Oil	11½-12½	11 -12	11 -12
300 Vis. No.5½ Color Red Oil	13½-14½	13½-14½	13½-14½
500 Vis. No. 6 Color Red Oil	15½-16	15½-16	15½-16
750 Vis. No. 6 Color Red Oil	20½-21½	20½-21½	20½-21½
CALIFORNIA			
(Viscosity at 100° F.)			
100 Vis. No. 2 color	13½-14½	13½-14½	13½-14½
100 Vis. No. 3 color	9 -10	9 -10	9 -10
200 Vis. No. 3 color	15 -16	15 -16	15 -16
300 Vis. No. 3 color	16 -17	16 -17	16 -17
450 Vis. No. 3½ color	19½-20½	19½-20½	19½-20½
550 Vis. No. 3 color	21½-22½	21½-22½	21½-22½
600 Vis. No. 3½ color	23½-24½	23½-24½	23½-24½
100 Vis. No. 5 color	8 - 9	8 - 9	8 - 9
200 Vis. No. 5 color	13½-14½	13½-14½	13½-14½
300 Vis. No. 5 color	14 -15	14 -15	14 -15
400 Vis. No. 5 color	16 -17	16 -17	16 -17
500 Vis. No. 5 color	17 -18	17 -18	17 -18
600 Vis. No. 6 color	18 -19	18 -19	18 -19
700 Vis. No. 7 color	19½-20½	19½-20½	19½-20½

CYLINDER STOCKS

OKLAHOMA			
190-200 Vis. at 210° Bright Stock	29 -34	29 -34	29 -34
150-160 Vis. at 210° Bright Stock	26 -30	26 -30	26 -30
Medium Filtered Stock	-17	16 -17	16 -17
600 Steam Refined Olive Green	7¼- 8	7½- 8	7½- 8
600 Steam Refined Dark Green	6 - 6½	5½- 6½	5½- 6½
Black Oil	4 - 4¼	4 - 4¼	4 - 4¼
PENNSYLVANIA			
(1-inch Immersion Test)			
600 Steam Refined	22½ 23	-23	22½-23
635 Steam Refined	26 -26½	26½-27	-27
650 Steam Refined	-28	-28	28½-29
600 Flash	34 -35	33 -34	33 -34
600 Warren E.	26½-27	26 -26½	-26
600 Oil City E	25 -25½	24 -25	-24
600 Filtered D	32 -33	-32	-31
Cold Test Stocks (bright filtered)	38 -39	38 -39	37 -38
Cold Test Stock (dark filtered)	35 -36	35 -36	35 -36
Black Oil	- 8	- 8	- 8

Note.—Prices of total immersion test goods average 1 cent per gallon higher

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.

Use It With Air or Hand Pump or Both

1 Columbian Underground Storage Tank of high grade steel, expertly welded and having a substantial factor of safety over and above that required by the Underwriter's specifications.

2 Auxiliary pressure tank with a factor of safety beyond that of the ordinary filling station air tank. Also expertly welded and tied to bottom of storage tank.

3 Dished heads—standard construction on Columbian underground storage tanks—a factor which gives them strength not common to underground tanks of even heavier steel. Auxiliary pressure tank also has dished heads.

4 Two and one-half inch fill pipe, 36 inches long.

5 Four-inch pipe, 36 inches long, through which inlet valve to pressure tank may be removed for cleaning.

6 Feed line which conducts gasoline from pressure tank to tower container. Ends 1 inch above bottom of tank to prevent picking up bottom settlings.

7 Feed line to which hand operated rotary pump may be attached. Takes gasoline direct from storage tank. Does not interfere with air operation.

8 Air line through which air pressure is applied to auxiliary tank. (See also 10).

9 Clean out line. Extends to within one-half inch of bottom of pressure tank. By opening it, closing 6 and applying air through 8, bottom settlings are forced out into the open air.

10 Spud for attaching drain-back line permitting draining of tower container back into storage tank. This line and air line may be connected with a three-way by-pass valve, the operation of which drains the tower container back through line 6, into the pressure tank, up through line 8, through the by-pass valve and into the storage tank through line 10.

11 Spud for attaching vent pipe extending up into the air. 11a Double goose-neck type vent which may be attached to 11.

12 Extra 4-inch spud with plug. Foot valve may be inserted through this in the event foot valve type of pump is used.

13 Welded-on elbow fill pipe through which pressure tank is filled with gasoline and into which is fitted one-way valve.

14 One-way inlet valve which opens automatically when pressure on auxiliary tank is released. Through it the auxiliary tank fills with gasoline by gravity.

15 Rod attached to housing of inlet valve and extending up through 4-inch pipe. With this rod the valve housing may be unscrewed from auxiliary fill pipe and lifted out through the 4-inch pipe in the event it should ever need attention.

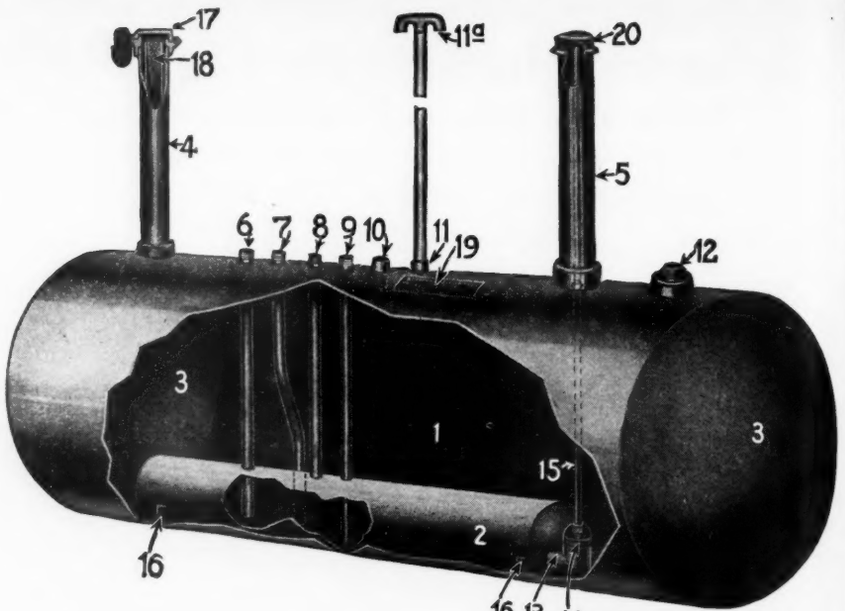
16 Steel straps which are welded to the auxiliary tank and to the bottom of the storage tank. Holds them together as a single unit.

17 Hinged cap atop the fill pipe. Has padlock arrangement.

18 Fine mesh strainer and fire screen fitting within the fill pipe.

19 Underwriter's label signifying that the Columbian Combination Underground Tank has been tested and approved by the Underwriter's laboratories.

20 Screw-on cap for 4-inch pipe provided for removing inlet valve to auxiliary pressure tank.



You too Will Like It

HUNDREDS of oil distributors swarmed the Columbian exhibit at the Tulsa show to inspect the "Cow and Calf" Tank. Many of them came back the second and third time to study it. Not a one left without expressing his appreciation of this new Columbian invention. Without doubt it was the most popular equipment attraction for oil distributors at this great International show.

One Chief of Distribution for a large oil company sent more than a score of his men to look it over and report to him. Their unanimous report was "Chief, buy us 'Cow and Calf' tanks for our underground storage and nothing else."

Already, manufacturers of air operated pumps are adopting the "Cow and Calf" tank as a standard unit of their systems.

What is the "Cow and Calf" tank and what does it do?

Briefly, it is a high grade, all-welded, dished head Columbian underground storage tank into which is built the auxiliary air tank necessary for the operation of air systems. It eliminates a separate air tank. It combines the storage and air tanks in one unit.

It is a combination tank in more ways than one. Besides air operated pumps it will handle hand operated pumps of the rotary or foot valve type. It will handle any one, any two or all three types simultaneously without interference, one with the other. How does it do it? Read the full details in the column to the left.

The Columbian Combination Underground (Cow and Calf) Tank has been approved by the Underwriter's laboratories and bears their label. Write for detail blue prints and specifications covering your underground requirements.

Truck Tanks
Oil Field Tanks
Bulk Station Tanks

Underground Tanks
Floating Tank Decks
Barrels, Buckets

Carrying Cans, Funnels
Faucets, Valves

Oil and Gasoline Pumps
Plates, Sheets, Angles

COLUMBIAN STEEL TANK COMPANY

EST'D 1894

TANKS FOR THE WORLD

1405-1625 WEST 12TH STREET KANSAS CITY, MISSOURI

NEW YORK
30 Church Street

TULSA, OKLA.
Owasso and Frisco Tracks

DALLAS, TEXAS
210 Southwestern Life Bldg.

LOS ANGELES, CALIF.
806 Wright & Callender Bldg.

SAN FRANCISCO, CALIF
564 Market Street

Refinery Markets On Wax And Heavy Oil Products

Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas, California

WAX

PENNSYLVANIA	Prices Dec. 15	Prices Dec. 8	Prices Dec. 1
(Per Pound New York)			
122-124 White Crude Scale	5⅜- 5½	5⅜- 5½	5½- 5¾
124-126 White Crude Scale	5⅜- 5¾	5⅜- 5¾	- 5¾
OKLAHOMA			
(Per Pound Group 3)			
124-126 White Crude Scale	5 - 5⅛	4¾- 5	4¾- 5
CALIFORNIA			
White Crude Scale	7⅛- 8	7⅛- 8	7⅛- 8

FUEL OIL

PENNSYLVANIA			
36-40 Fuel Oil	- 6⅛	6¼- 6⅛	6 - 6¼
30-34 Fuel Oil	5¾- 6	5⅛- 5¾	5⅛- 5¾
OKLAHOMA			
38-40 Straw distillate	3⅝- 3⅞	3⅝- 3¾	3⅜- 3¾
36-38 Straw dist'llate	3⅜- 3⅝	3⅜- 3½	3¼- 3⅜
32-36 Gas oil	3⅛- 3¼	3⅛- 3⅜	3 - 3⅛
26-30 Fuel oil (Bbl.)	-1.25	1.20-1.25	1.15-1.20
24-26 Fuel oil (Bbl.)	1.17½-1.20	1.15-1.20	1.12½-1.15
24-26 Fuel oil (Buyers' cars)	1.17½-1.20	1.15-1.20	1.10-1.15
20-22 Fuel oil (Bbl.)	-1.15	-1.15	1.10-1.12½

NORTH TEXAS	Prices Dec. 15	Prices Dec. 8	Prices Dec. 1
38-40 Straw Distillate	3½- 3¾	3½- 3¾	3⅜- 3¾
32-36 Gas Oil (Gal.)	3 - 3⅛	3⅛- 3¼	3 - 3¼
24-26 Fuel, per bbl.	1.15-1.20	1.20-1.25	-1.15
GULF COASTAL			
Fuel	1.60-1.75	1.60-1.75	1.60-1.75
Gas Oil	4½- 4¾	4¾- 4¾	4¾- 4¾
NORTH LOUISIANA			
32-36 Gas Oil (Gal.)	3¼- 3½	3¼- 3¾	3⅛- 3¾
18-20 Fuel Oil (Bbl.)	1.10-1.15	-1.10	1.05-1.10
ARKANSAS			
38-40 Distillate	- 4	3¾- 3¾	3¾- 3¾
32-36 Gas Oil	3¾- 3½	- 3¼	3 - 3¼
20-24 Refinery Fuel Oil (Bbls.)	1.15-1.17½	1.15-1.20	1.05-1.10
Smackover Crude Fuel (Bbls.)	1.12½-1.17½	1.12½-1.17½	-1.15
East Field Crude Fuel (Bbls.)	1.12½-1.17½	1.12½-1.17½	-1.15
CALIFORNIA			
14-18 Fuel Oil (Bbl.)	1.40	1.40	1.40
14-18 Bunker Oil (Bbl.)	1.40	1.40	1.40
24-30 Gas Oil (Bbl.)	1.65	1.65	1.65
27 + Diesel Oil (Bbl.)	1.65	1.65	1.65

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.

(Continued from page 113)

estimated motor car registration and an increase in export movement to 110,000,000 gallons. Production of gasoline for November estimated on the daily average basis maintained during October. While there was an increase in production in the Mid-Continent, it is estimated that certain other fields curtailed their operations to a certain extent.

The National Petroleum News estimate shows production at 736,000,000 gallons and domestic production at 640,000,000 gallons, which, with export figures in, indicates a reduction in total stocks of 4,000,000 gallons to 1,148,000 gallons.

Crude Market Quiet

Mid-Continent refiners are fairly optimistic at present. The threat to the crude oil price structure caused by the discovery of Wortham appears to have removed the probability of increases in Mid-Continent crude prices for the present. During the past two winters refiners have been forced to pay higher price for crude during the winter months and hold their gasoline until spring.

If present crude costs are maintained refiners will be in a better position to operate during the dull months of late winter and early spring without being forced to dump gasoline on an unreceptive market There is always the chance, too, that winter inventories accumulated on low-priced crude may enhance in value next summer and give the refiner a profit which he has been needing so badly the past two years.

Natural Gasolines

There has been more natural gasoline available in the market during the past week than has been the case for many weeks in the past. Buyers are being offered goods today whereas it has been necessary to shop around carefully to obtain even stray cars during the past two months. In Oklahoma prices have been maintained without much change. Grade A and Double A are selling at 9 cents per gallon today whereas a week ago the price was 9 to 9¼ cents. Grade C is more plentiful than absorption grades and is selling at 8¼ to 8½ cents per gallon.

Although it is still early in December, there is some inquiry for January shipment of natural gasolines and manufacturers are quoting future goods at prices not greatly different from the present spot market. Manufacturers are generally willing to sell ahead so that they will be sure of an outlet for their January production.

Kerosene Slow

Kerosene is still the slowest commodity offered in the Mid-Continent market. There has been no important change in prices for several weeks. Shipments have been approximately on the level of production and the gradual increase in stocks has not been sufficient to cause refiners to shade their prices to get business. During the week ending Dec. 5, the National Petroleum News refinery survey showed a heavy movement of kerosene from Kansas and north and central Texas plants but Oklahoma shipments were somewhat lower than production.

Distillates have been in somewhat better demand since the weather has been colder and refiners are looking for even better business on home heating oils during the latter part of December and the early months of the year.

Cylinder Stocks Active

Buying of steam refined cylinder stocks for both foreign and domestic trade has been active. Medium filtered stock is uniformly quoted at 17 cents per gallon today whereas last week some refiners were willing to sell at 16 cents. Several refiners are sold up on both olive and dark green stocks. Neutral oils are weak without substantial price change. Wax has jumped back up above 5 cents per pound as the result of new buying. The quantity available in the field is not large.

Gas oil has been selling well above 3 cents per gallon throughout the week. Many refiners are willing to sell nothing at less than 3 cents per gallon and the bulk of the material is moving at 3⅛ or more.

Demand for fuel oil has been somewhat less keen but there has been no material change in the prices at which new sales have been made. Low gravity fuel has been firmly held at $1.15 per barrel. Standard 24-26 fuel is moving at $1.17½ to $1.20 per barrel, a slight advance over last week's prices.

Decrease In Gasoline Stocks Indicated

National Petroleum News' estimate of U. S. Gasoline production and consumption for November, with estimated stocks as of Dec. 1, follows:

	GALLONS
Stocks Nov. 1	1,152,374,237
Plus Imports	10,000,000
Less Exports	110,000,000
Plus Domestic Production	736,000,000
Less Domestic Consumption	640,000,000
Estimated Stocks Dec. 1	1,148,374,237
Decrease from Nov. 1..	4,000,000

Only Fuel And Gas Oils Strong On Chicago Market

CHICAGO, Dec. 13.

GRADUAL slackening of gasoline demand, due to bad weather and filled storage tanks, resulted in a gradual softening in the gasoline price in Chicago starting Tuesday, and from 9 cents a gallon the price came slowly down. On Saturday morning 8¾ cents a gallon was the top of the market in Chicago, quoted by representatives of Group 3 refineries. Business was done at 8½ cents by carload marketers selling U. S. Motor gasoline.

It is a little unusual, but not unprecedented, for Chicago dealers to sell gasoline made in Oklahoma for ¼ cent under the price quoted by Group 3 refiners on spot material. That condition existed Saturday. Marketers were being pressed for shipping instructions and they had to get the material off their hands at whatever price was necessary to move it. Naturally the few jobbers in the market were taking the bargains offered by resale agents, and the marketers themselves were not buying.

Such a situation in no way indicates what next week will bring forth as it seldom lasts more than 48 hours at a time. Chicago is a resale market and the prices here should be a shade higher than in Tulsa. In two days after a market like this, Chicago ordinarily can dispose of its distress material and get back on a normal relation to Group 3; or else Group 3 prices decline. One or the other will happen early in the week, in the opinion of men who have seen many market ripples of this sort.

Prices of lighter grades of gasoline fell off proportionately with U. S. Motor specification material. Nevertheless the demand on better grades than Motor is a little better than for competitive material. It is not strong but the call is fairly consisent, coming from regions where cold weather converts nearly all the pleasure cars from ordinary gasoline consumers to high-test users every winter. This call always makes the spot market more active and holds fairly uniform the whole winter until roads are actually blocked by snow.

Kerosene demand has not improved since last week and the price is no better than it was. Both grades of refined oil can be bought within ⅛ cent either way from 4½ cents. Straw distillate, for which there is a smaller demand at present than any prophet would have predicted last fall, shares in the weakness of kerosene. The best of it can be had for 4 cents, and variations of the same material in color, flash test, cold test and odor, can be bought all the way down to 3½ cents.

Gas oil is no higher in price than it was a week ago. The ruling price range is 3⅛ to 3⅜ but the demand is satisfactory. Actual experience has shown that gas oil is more of a winter product this year than usual and more of a household fuel than distillate. It is not expected to slip off in price even if the lighter burning oils do, for it is in demand and being buoyed up by the strength of refinery fuel oil which is selling at $1.20 and is quoted at $1.25 over this month. Smackover crude fuels are holding their own around $1.15.

Gasoline More Quiet In North Texas

WICHITA FALLS, Dec. 13.—Gasoline demand has been less brisk in the north Texas refinery market this week. Cessation of new buying has caused more concessions to be made in spot prices although there is little gasoline available in the market for early delivery. Refiners, however, are pursuing a policy of keeping their tanks bare of gasoline as much as possible. Small quantities of U. S. Motor may be purchased today at 8¾ cents per gallon although most of the refiners are demanding 9 cents.

Large companies along the Gulf coast which were buying Motor actively last week have left the market. Jobbers are less interested also because of the extremely narrow margin between tank car and tank wagon prices.

Prime white distillates are strong and difficult to buy in north Texas as a result of cooler weather. Kerosene, however, has moved less readily than last week and refiners in some cases have accepted orders for 41-43 at 4¼ cents per gallon.

On account of the active fuel market in Group 3 and the high prices there, refiners in north Texas have been able to ship considerable quantities of 24-26 into Indiana territory this week at around $1.15 per barrel. Railroad and smelter buying in the southwest has been less active, however, and the supply of fuel oil is more plentiful than last week. Prices range from $1.15 to $1.20 per barrel. Gas oil is quiet at 3 to 3⅛ cents per gallon.

Bidding for spot crude in this area has pushed premiums upwards. Current sales are being made at 20 to 30 cents over the posted market although 30 cents is considered too high by refiners.

Pennsylvania Neutrals And Stocks Continue Scarce And Strong

CLEVELAND, Dec. 15.—With the exception of a slight easing in gasoline prices today, Pennsylvania refined products are continuing strong. Demand continues to be heavy and practically all lubricating oils are sold over the remainder of this month.

The imposing and lifting of the National Transit Co.'s embargo on running crude oil to storage apparently has not been felt in any part of the Pennsylvania market. There has not been enough crude oil available to refiners to enable them to catch up with their orders and to provide a surplus from which goods for immediate shipment may be drawn.

An easing in gasoline prices today really reflects the softening of the Mid-Continent price structure. Many refiners still report they are receiving many more inquiries than they could fill were they to get the orders. Practically all are confident that the Pennsylvania market will hold up during the winter. They do not expect to move all gasoline moved. They want to build up their stocks so they will be in good shape to start next season.

Neutrals and cylinder stocks are strong. While the amount of new business in cylinder stocks has not been so large in the last week or two, present orders will carry refiners to or beyond Jan. 1 at their present rate of output and new business expected after the first of the year will bring conditions comparable to a boom, many believe.

This optimism is evident in quotations for cylinder stocks for January delivery. One refiner today was asking 30 cents for 650 fire steam refined stocks, 29½ for 635 fire and 35½ for 600 flash, all total immersion goods. These prices represent advances of 1½ to 2 cents over the spot market. Another refiner was quoting filtered stocks for January delivery, an average of 2 cents per gallon over the nominal spot market.

Viscous neutral oils are scarce. Prices are strong. One day last week a leading Independent lowered his 150 viscosity No. 3 color neutral to 20 cents but today his own particular situation had so clarified itself that he was back in line with other refiners who were holding to 21 cents for this grade. Neutrals of low cold test are selling at 3 cents per gallon over the standard Pennsylvania grades.

While kerosene has been holding a rather even keel, prices being fairly steady between 7¼ and 7½ cents for 45 water white, fuel oil has acquired considerable strength and has advanced further. Demand for Pennsylvania fuel oil is coming from three sources. One is the demand for the 36-40 distillate for cracking; another is the increased industrial consumption due to the renewed activity in many manufacturing lines, and the third is a new demand, that as a furnace oil.

Fuel oil seems to have outstripped kerosene in demand for the present, indicating that consumers are seeking a heavier

(Continued on next page.)

Tank Wagon, Service Station Markets
Gasoline and Kerosene

BELOW are given in cents a gallon, the tank wagon price of gasoline without the special taxes levied against motor fuels by many states, the amount of the state taxes, the total tank wagon price, with tax added in and the service station or retail price of gasoline as quoted by the Standard Oil Companies in their various marketing territories. The right hand column is the tank wagon price of kerosene. By tank wagon price is meant the price to resale agents or dealers. Usually this price does not apply to sales to consumers from tank wagons.

Prices in effect December 15

S. O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total	Oil S.S.	T.W.
Atlantic City, N. J.	13.5	0	13.5	15.5	13
Newark, N. J.	13.5	0	13.5	*	13
Annapolis, Md.	13	2	15	*	12
Baltimore, Md.	13	2	15	17	11
Cumberland, Md.	13	2	15	17	12.5
Washington, D. C.	14	2	16	18	12.5
Danville, Va.	14	3	17	*	13.5
Norfolk, Va.	14	3	17	19	13.5
Richmond, Va.	14	3	17	19	13.5
Roanoke, Va.	14	3	17	19	13.5
Petersburg, Va.	14	3	17	*	13.5
Charleston, W. Va.	14	2	16	18	13.5
Clarksburg, W. Va.	14	2	16	18	13.5
Keyser, W. Va.	13	2	15	*	13.5
Parkersburg, W. Va.	14	2	16	18	13.5
Wheeling, W. Va.	14	2	16	18	13.5
Williamson, W. Va.	14	2	16	*	13.5
Charlotte, N. C.	12	3	15	17	13.5
Hickory, N. C.	12	3	15	*	13.5
High Point, N. C.	12	3	15	*	13.5
Mt. Airy, N. C.	12	3	15	*	13.5
Salisbury, N. C.	12	3	15	*	13.5
Charleston, S. C.	12.5	3	15.5	17.5	14
Columbia, S. C.	12.5	3	15.5	17.5	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK TERRITORY

*New York City	15	0	15	18	13
Albany, N. Y.	15	0	15	17	13
Buffalo, N. Y.	14	0	14	17	13
Rochester, N. Y.	15	0	15	19	13
Syracuse, N. Y.	15	0	15	17	12
Boston, Mass.	15	0	15	18	11
Augusta, Me.	15	1	16	18.5	13
Manchester, N. H.	15	2	17	19.5	13
Burlington, Vt.	15	1	16	18.5	13

*In steel barrels.

ATLANTIC REFINING TERRITORY

Pittsburgh, Pa.	15	0	15	*20	14
Philadelphia, Pa.	15	0	15	*20	14
Allentown, Pa.	15	0	15	*20	14
Erie, Pa	15	0	15	*20	14
Scranton, Pa.	15	0	15	*20	14
Altoona, Pa.	15	0	15	*20	14
Dover, Del.	15	2	17	20	14
Wilmington, Del.	15	2	17	20	14
Providence, R. I.	15	0	15	18	13
Springfield, Mass.	15	0	15	18	13
Worcester, Mass.	15	0	15	18	13
Hartford, Conn.	15	1	16	19	12
New Haven, Conn.	15	1	16	19	13
Boston, Mass.	15	0	15	18	11

*Contains 2-cent tax collected by retail dealer and paid by him directly to state.

S. O. OHIO TERRITORY

All Ohio points	15	0	15	17	14

S. O. KENTUCKY TERRITORY

Lexington, Ky.	13	3	16	19	14
Louisville, Ky.	12	3	15	17	12
Covington, Ky.	12	3	15	18	14
Clarksdale, Miss.	12	3	15	18	12
Jackson, Miss.	12	3	15	18	10
Natchez, Miss.	11.5	3	14.5	17.5	11.5
Vicksburg, Miss.	11.5	3	14.5	17.5	11.5
Birmingham, Ala.	13	2	15	18	14.5
Mobile, Ala	12	2	14	17	12.5
Montgomery, Ala*	14	2	16	19	15.5
Atlanta, Ga.	14	3	17	20	11
Augusta, Ga.	14	3	17	20	13.5
Macon, Ga.	14	3	17	20	14.5
Savannah, Ga.	11	3	14	17	13
Jacksonville, Fla.	12	3	15	18	13
Miami, Fla.	14	3	17	20	14.5
Tampa, Fla.	12	3	15	18	13
Pensacola, Fla.	12	3	15	18	13.5

*Local privilege tax of 1 cent on gasoline and ¼ cent on kerosene at Montgomery included.

S. O. CALIFORNIA TERRITORY

Phoenix, Ariz.	18	3	21	24	21.5
Los Angeles, Cal.	11.5	2	13.5	16.5	15.5
Fresno, Cal.	13.5	2	15.5	18.5	17.5
San Francisco, Cal.	13	2	15	18	15.5
Reno, Nev.	16.5	2	18.5	21.5	19
Portland, Ore.	13	3	16	19	16.5
Seattle, Wash.	13	2	15	18	16.5
Spokane, Wash.	17	2	19	22	20.5
Tacoma, Wash.	13	2	15	18	16.5

S. O. LOUISIANA TERRITORY

	Gasoline T.W.	Tax	Total	Oil S.S.	T.W.
Camden, Ark.	13	4	17	19	13
Little Rock, Ark.	13	4	17	19	11
West Helena, Ark.	13	4	17	19	12
Alexandria, La.	12.5	2	14.5	16.5	13
Baton Rouge, La.	11	2	13	15	11.5
Lake Charles, La.	12.5	2	14.5	16.5	13
New Orleans, La.	11.5	2	13.5	15.5	10
Shreveport, La.	12.5	2	14.5	16.5	13
Bristol, Tenn.	15	2	17	19	13.5
Chattanooga, Tenn.	13.5	2	15.5	17.5	14.5
Knoxville, Tenn.	14.5	2	16.5	18.5	15
Nashville, Tenn.	13.5	2	15.5	17.5	13.5
Memphis, Tenn.	12	2	14	16	14

MAGNOLIA PETROLEUM TERRITORY

Muskogee, Okla.	11.5	2½	14	19	11
Oklahoma City	11.5	2½	14	17	11
Tulsa, Okla.	9.5	2½	12	15	10
Fort Smith, Ark.	11	4	15	18	12
Little Rock, Ark.	13	4	17	19	11
Texarkana, Ark.	12	*4	16	19	10
Dallas, Tex.	10	1	11	14	10
El Paso, Tex.	11	1	12	14	11
Fort Worth, Tex.	9	1	10	14	10
Houston, Tex.	9	1	10	14	10
San Antonio, Tex.	9	1	10	12	10

*Within city of Texarkana, Ark., the state tax on gasoline is 1c per gal. conforming with the Texas state tax. In Texarkana district outside of the city, the 4c state tax applies.

S. O. INDIANA TERRITORY

Chicago, Ill.	†14	0	†14	16	11
Decatur, Ill.	13.2	0	13.2	15.2	11.5
E. St. Louis, Ill.	12.1	0	12.1	14.35	10.6
Joliet, Ill.	13.4	0	13.4	15.4	11.7
Peoria, Ill.	13	0	13	15	11.5
Quincy, Ill.	13.2	0	13.2	15.2	11.3
Indianapolis, Ind.	13.2	2	15.2	17.2	11.7
Evansville, Ind.	13	2	15	17	11.5
South Bend, Ind.	13.4	2	15.4	17.4	11.9
Detroit, Mich.	13.8	0	13.8	15.8	12.2
Grand Rapids, Mich.	13.7	0	13.7	15.7	12.1
Saginaw, Mich.	13.9	0	13.9	15.9	12.3
Madison, Wis.	13.3	0	13.3	15.3	11.5
Milwaukee, Wis.	13.1	0	13.1	15.1	11.3
La Crosse, Wis.	14.2	0	14.2	16.2	12.4
Minneapolis, Minn.	14.2	0	14.2	16.2	12.6
Duluth, Minn.	14.5	0	14.5	16.5	12.6
Mankato, Minn.	14.1	0	14.1	16.1	12.4
Des Moines, Iowa	13.5	0	13.5	15.5	11.9
Davenport, Iowa	13.5	0	13.5	15.5	11.9
Sioux City, Iowa	13	0	13	15	11.5
Mason City, Ia.	13.5	0	13.5	15.5	11.9
St. Louis, Mo.	12.1	½	12.6	14.9	11
Kansas City, Mo.	12.9	1	13.9	15.9	10.3
St. Joseph, Mo.	12.5	½	13	15	10.9
Fargo, N. D.	14.9	1	15.9	17.9	14.6
Grand Forks, N. D.	15.1	1	16.1	18.1	14.9
Minot, N. D.	15.9	1	16.9	18.9	14.6
Pierre, S. D.	15	2	17.0	*	13.1
Huron, S. D.	15	2	17.9	19.0	13.1
Wichita, Kans.	12.8	0	12.8	14.8	9.8
Bartlesville, Okla.	11.9	2½	14.4	16.4	9.9

†Dumps of 100 or more gallons at 13c per gallon.
*S. O. Indiana does not operate station.

S. O. NEBRASKA TERRITORY

Crawford, Neb.	14	0	14	*	12.25
Omaha, Neb.	11	0	11	13	11.5
McCook	14.75	0	14.75	16.75	13
Norfolk	13.75	0	13.75	15.75	12
North Platte	14.75	0	14.75	16.75	12.75
Scotts Bluff	14.25	0	14.25	16.25	12.25

*Standard has no service station here.

CONTINENTAL OIL TERRITORY

Denver, Colo.	12	2	14	16	13.5
Glenwood Sp'gs, Colo.	18	2	20	*	17.5
Pueblo, Colo.	14	2	16	18	13.5
Basin, Wyo.	16	1	17	*	14
Casper, Wyo.	14	1	15	17	12
Cheyenne, Wyo.	15.5	1	16.5	18.5	13.5
Cody, Wyo.	17	1	18	*	15
Lander, Wyo.	16	1	17	*	14
Sheridan, Wyo.	18	1	19	21	16
Billings, Mont.	16.5	2	18.5	20.5	14.5
Butte, Mont.	18	2	20	22	15
Great Falls, Mont.	18	2	20	22	16
Helena, Mont.	18	2	20	22	16
Miles City, Mont.	17.5	2	19.5	21.5	15.5
Missoula, Mont.	19	2	21	23	16
Ogden, Utah	17.5	2½	20	22	17
Salt Lake City, Utah	17.5	2½	20	22	17
Boise, Ida.	19.5	2	21.5	23.5	19
Idaho Falls, Ida.	19	2	21	23	18.5
Albuquerque, N. M.	19.5	1	20.5	22.5	15.5

*Continental has no service stations at these points.

(Continued from preceding page)

oil for a burning oil. This fact will enable refiners to make a wider cut for the burning oil fraction and relieve them of the necessity of making extensive treatment for color and odor. Some refiners also are running their non-viscous neutrals in with the fuel because there is no wide difference in price. Kerosene as a tractor fuel is out of season and incubator demand will not develop until after the first of the year.

Paraffin wax has been a little firmer. Stocks are said to be low in New York and more buying is expected after Jan. 1.

Week's Price Changes Tank Wagon Market

Gasoline Changes

Continental Oil—T.W. and s.s. advanced 1½ cents at Albuquerque, N. M. to 20.5 and 22.5 cents respectively Dec, 8.

Standard of Louisiana—Correction: t.w. at Camden and West Helens, Ark. should have been 17 cents s.s. 19 cents since Nov. 8. Chattanooga t.w. has been 15.5 cents s.s. 17.5 cents since Nov. 17.

Benzol Stock Increasing

NEW YORK, Dec. 15.—Increased firing of coke ovens during the last month or so has resulted in a larger output on benzol. Stocks are slowly increasing. Big distributors, however, still report difficulty in meeting all of the orders coming in. Consumers are still buying fairly heavily, and no price reductions are in sight as yet. Consumption is larger than usual for the season. Motor fuel blenders were credited with a good deal of last week's demand.

	Dec. 15	Dec. 8
90%, tank cars, works	23	23
Pure, tank cars, works	24-25	24-25

Above are industrial grades of benzol; motor grades run 2 cents under to 2 cents over gasoline tank wagon prices at point of delivery.

Generally Fair Weather Booked This Week

CHICAGO, Dec. 15.—Cold and fair weather is predicted for this week over all of Standard Oil Co. of Indiana territory, except that about Wednesday the entire region may expect a little snow and slight rise in temperature.

The whole eastern half of the United States was wet for two days early last week. Only scattered showers came during the following three days. Saturday brought another fall of rain and snow to the region of the Great Lakes with the rest of the country cold and bright.

November was an exceptionally moderate month, being two degrees warmer on the average than normal, considerably dryer and more abundant in sunshine.

Complete Export Markets

New York **Gulf Coast** **California**

Export Buying Lags As Holidays Draw Near; Bunker Stronger

NEW YORK, Dec. 15

EXPORT demand for the major petroleum products was disappointing last week. Prices for both gasoline and kerosene were lower at the close. The slump in foreign demand is attributed to the approaching holidays. Whereas leading refiners were asking 11 to 11¼ cents a gallon for U. S. Motor in tank cars, f. o. b. New York harbor terminal at the beginning of the week, offerings were made at 10½ cents on Saturday.

There was a heavy consignment movement but very little fresh buying developed. Orders for small lots were very scarce also and prices in general showed a downward tendency. British buyers were inquiring in a fairly active way at the beginning of the week, but purchased little or nothing. French buyers appeared more keenly interested but were unwilling to meet refiners' views regardless of the advance in foreign exchange. The movement in cased gasoline was almost entirely on contracts, and new business reported was confined to one or two thousand case lots here and there for prompt shipment to South America and the West Coast of Africa.

Kerosene is Off

Kerosene was also off a little. Water white was available at 6¾ cents a gallon at the close of the week, although 7 cents was quoted in one or two directions. Delivered in tank cars to the trade, refiners were asking 8 cents a gallon. Stocks are somewhat larger than anticipated, and domestic jobbers are purchasing very cautiously. On the other hand, foreign buyers are showing an academic interest but that is about all. The tank wagon market is steady at 13 cents a gallon. Buyers are showing very little confidence in the market, and we are operating in a strictly hand-to-mouth way.

The movement in cased kerosene was almost entirely on consignment or against standing contracts. Several good sized inquiries have been received from local brokers with Chinese connections, but actual orders from these sources have been very small.

Bunker oil is in slightly better demand, and is one of the few bright spots in the market. Some observers are firmly convinced that by Jan. 15 grade C oil will be bringing around $2 a barrel. Receipts from the Pacific Coast are small, and refiners are finding all they can do in taking care of their standing contracts. Receipts of California oil have been falling off of late and little of Mexican crude oil is available.

Diesel oil is in better export demand, while domestic consumption is picking up. Leading refiners are doing a good business on a basis of 2.10 per barrel in bulk f. o. b. New York harbor refinery. The movement in furnace oil has also looked up a little and 37-40 is well held at 5½ cents a gallon, at the refinery. Refiners are delivering large quantities to office buildings, factories, etc., and there is comparatively little spot oil available.

Gas oil is a shade firmer. For dark 26-28, at the refinery, the asking price is 5 cents a gallon but buyers are not purchasing much at this figure. For 27-30 transparent oil the price was firm at 5¾ cents but no business worth mentioning developed. Leading refiners were asking 5 cents refinery for 36-40 while in one or two directions 28-34 was offered around 4¾ cents a gallon. Export inquiries were numerous but domestic refiners cannot compete with the Galician oil prices.

Lubricating oils were appreciably firmer as the week closed. For Pennsylvania 600 steam refined cylinder stocks in barrels, New York the asking price was 28½ cents a gallon, an advance of 1 cent a gallon over the previous week. Export demand is much better, and orders calling for from 500 to 800 barrels, were more numerous than during the preceding week. Paraffin oils are in growing demand. French buyers are inquiring more actively, for their first quarter of 1925 requirements. British buyers are purchasing in small quantities but German interests are showing more disposition to purchase ahead.

The movement in white crude scale wax improved towards the end of the

New York Export Market

Prices below are averages of actual sales by local exporting Agencies

The following light oil, gas and fuel oil prices are F. O. B. New York refineries, being Products made from Domestic (including California) and Mexican Crudes.

	Dec. 15	Dec. 8
U. S. Motor Gasoline, Tank Cars Delivered	12	-12
U. S. Motor Gasoline, Tank Cars Bayonne	-10½	-11
Kerosene, 45-150 W W Tank, Cars Del'd	.07¾	.08¼
Grade C Bunker, f.o.b.N.Y.	1.80	1.80
Diesel Oil f.o.b. Refinery	2.19	2.10
Gas Oil, 36-40, Bulk, refinery	.05	.05

PENNA. LUBRICATING OILS

The following Prices are cooperage Basis F. O. B. New York, Products being manufactured by inland refineries.

CYLINDER OILS	Dec. 15	Dec. 8
Penna. Filtered D 600 bbls	-35½	-35½
Penna. Filtered E 600 bbls	-33	-33½
Unfiltered 600 s.r.bbls	28½-29½	27 -28
Unfiltered 650 s.r.bbls	35 -36	35 -36
600 flash s. r. bbls	-39	-39
Western 600 s. r. bbls	-15¼	-14¾
Bloomless 30-31 grav. bbls	-25	-25
RED PARAFFIN (bbls.)		
300 vis. at 100°F	23½	23½
250 vis. at 100°F	23	23
175 vis. at 100°F	-22½	-22½
High Viscosity Paraffin	29	29
225 vis. pale 100 at 100°F	-15	-15
SPINDLE (bbls.)		
200 vis. Pale at 100°F	21	21
180 Pale	20	20
150 Pale	17	17
BLACK OIL (bbls.)		
25-30 c. t.	14 -15½	14 -15½
15 c. t.	15 -16½	15 -16½

WAXES

(Penna. Stocks)

(F. A. S. Carload Lots)

WHITE CRUDE SCALE	Dec. 15	Dec. 8
122-124 A. m. p.	-05¼	-05¼
124-126 A. m. p.	-05⅜	-05½
MATCH		
105-108 A. m. p.	06	06
111-115 A. m. p.	06⅛	06⅛
FULLY REFINED		
118-122 A. m. p.	05¼	05¼
123-125 A. m. p.	06	06
125-127 A. m. p.	06⅛	06⅛
128-130 A. m. p.	06⅜	06⅜
130-132 A. m. p.	06⅜-06½	06⅜-06½
133-135 A. m. p.	07⅛	07⅛
SEMI REFINED		
122-124 A. m. p.	05½	05½
YELLOW CRUDE SCALE		
124-126 A. m. p.	05¼	05¼

PETROLATUMS

(Penna. Stocks)

Snow White	12¾	12¾
Lily White	10	10
Cream Petroleum Jelly	07¾	07¾
Veterinary	03¾	03¾
Light Amber	03⅞	03⅞
Dark Amber	03¾	03½
Dark Green	03½	03½

(Cooperage Basis)

MEDICINAL OILS

(Penna. Stocks)

Domestic 875-885 s. g. drums	.98 -1.05	1.05
Domestic 865-870 s. g. drums	85	85
Russian 885-890 s. g. 325-330 vis. drums	1.25	1.25

week, but in the main business was quiet and no price changes worthy of mention took place. Fully refined waxes were in slightly better demand, with United Kingdom buyers credited with most of the purchases. Scandinavian buyers were credited with a fair part of the demand for match waxes.

Petrolatums marked time the greater part of this week. Consumption abroad is gradually falling off, and stocks are ample. Medicinal oils are holding up well at present levels.

Gasoline Unsettled At New Orleans; Bunker "C" Oil Advancing

By Special Correspondent

NEW ORLEANS, Dec. 15

THE bulk gasoline market was an unsettled affair as the week closed. Export demand has been spasmodic with foreign buyers skeptical about supporting the market since the advance in prices a week ago. One of the smaller Independents reported the sale of a cargo of 52,000 barrels of U. S. Motor gasoline to a large Continental buyer at 10½ cents a gallon, for shipment between Jan. 1 and 15. It is believed that a Frenchman bought this gasoline.

Most of the leading refiners were asking 11 cents a gallon for Motor and 14 cents for 64-66 gravity. There was a persistent, although unconfirmed report current early in the week to the effect that one of the large Independents sold two cargoes of gasoline and kerosene mixed for January-February shipment from the Gulf at 11⅜, 14⅜, 7, and 6 cents respectively, for Motor, 64 gravity gasoline, water and prime white kerosene. These cargoes are supposed to have been purchased by a large United Kingdom buyer.

Cased Goods Moving Freely

Cased gasoline is moving a little more freely at unchanged prices. For Motor the majority of refiners are asking $2.40 per case while 64 gravity is held at $2.70 per case. Japanese are credited with a fairly large part of the buying. Chinese consumers are inquiring in an active way but are reluctant to purchase other than as needed. South American consumers have been taking larger quantities and there is a good movement to the west coast of Africa on consignment. The demand from the Near East has been rather spasmodic and not quite up to expectations.

Kerosene is in slightly better request but the movement is chiefly against contract and no fresh sizable purchases have been heard of. Prime white is offered more freely at 6 cents a gallon while water white was steady at 7 cents a gallon. Cased prime white is holding up well at $1.60 per case while water white is unchanged at $1.70 per case. Most of the orders reported were from the Orient and South America while demand from Australia and New Zealand has been slightly more spirited. German buyers have been inquiring for bulk kerosene more spiritedly but are reluctant to stock up at present asking prices. British buyers are fairly well covered for the immediate future and are not showing much interest, but several cargo inquiries were received from French buyers. Italian buyers are purchasing very sparingly.

The bunker oil market is much firmer. Although grade C oil from Mexican crude is still offered around at $1.55 per barrel, this price is expected to advance soon because leading factors have just advanced the price at Tampico 5 cents a barrel to $1.45, taxes paid, reflecting the scarcity of heavy crude oil. Many refiners are already asking $1.60 per barrel for grade C oil at New Orleans, and not a great deal is available at either price. Demand on the other hand is much better than expected regardless of the fact that many big consumers are covered on contract. Spot buying was more spirited than during the preceding period. Export inquiries are numerous enough but actual orders, from the other side are scarce.

Gas Oil is Steady

Gas oil prices were fairly steady with most refiners quoting 26-28 and 32 plus transparent oil at 4¾ to 5 cents a gallon. There was virtually nothing below the inside price. Demand from the other side is light, most buyers considering prices are too high. However, there is a fairly steady movement abroad against previously placed contracts and these together with a steady domestic demand tends to keep stocks down and prices firm.

Want Zero Test Oils

Zero cold test lubricating oils are in much better export demand but stocks are rather low and prices are expected

Pacific Export Market

(Cargo lots quotations at seaboard, San Francisco Bay and Los Angeles refinery points, f.o.b. docks.)

	Dec. 15	Dec. 8
Gasoline, U. S. Motor— 54°—56°	08½- 09½	08½- 09½
Gasoline—U. S. Motor blends and special cuts	09 - 10½	09 - 10½
Gas Oil, 24°—30°B per bbl.	$1.65	$1.65
Diesel Oil, 27°B-plus per bbl.	$1.65	$1.65
Bunker Oil, 14°—18°B per bbl.	$1.40	$1.40
Fuel Oil, 14°—18°B per bbl.	$1.40	$1.40
Kerosene, W. W. 40°—42° B per gal., 125-150 flash test	05 -06½	05½-06½
Cased Goods		
Gasoline, U. S. Motor	$2.50	$2.50
Kerosene, W. W. 40°—42° B per case, flash test 125-150	$1.55- 1.65	$1.55- 1.65

N. Y. Export Quotations

Furnished by big exporting oil companies. No actual sales. Record for statistical purposes only.

Illuminating Oils
Standard Oil of New Jersey

	Dec. 15	Dec. 8
Bulk, gal., Bayonne	6.50	6.50
Barrels, gal., Bayonne, cargo	13.50	13.50
Cases, gal., Bayonne	16.90	16.90

Prices for water white oil (150 test) are 1 cent higher than those for standard white.

Gasoline-Naptha
(Cents per Gallon)

U. S. Motor, dead bulk	12.50	12.50
U. S. Motor, cases	26.65	26.65
Export Naptha bulk	14.75	14.75
64-66 deg. bulk	16.00	16.00
66-68 deg. bulk	17.50	17.50

Tide Water Oil Company
(f. o. b. Bayonne)

58-59 deg. bulk	14.00	14.00
58-59 deg. cases	26.65	26.65
Export grade, U. S. Motor Specifications bulk	12.50	12.50
63-65 deg. bulk	15.50	15.50
68-72 deg. bulk	18.00	18.00

	Bulk	Barrels	Cases
Standard white 110	6.50	13.50	16.90
Water white 150	7.50	14.50	17.90

The Texas Company

Gasoline, cases		26.65	26.65
Kerosene	**Bulk**	**Barrels**	**Cases**
Standard White	6.50	13.50	16.90
Prime White	7.00	14.00	17.40
Water White	7.50	14.50	17.90

Gulf Export Market

(Actual Sales Prices)
Gasoline

	Dec. 15	Dec. 8
U. S. Motor, Bulk F.O.B.	10½-.11	-.11
64-66, Bulk F.O.B.	13¾-.14	-.14
U. S. Motor, Cases (Cargo Lots)	2.40	2.40
64-66, Cases (Cargo Lots)	2.70	2.60
KEROSENE		
Water White, bulk	-.07	-.07
Prime White, bulk	-.06	-.06
Water White, cases (Cargo Lots)	1.70	1.70
Prime White, cases (Cargo Lots)	1.60	1.60
GAS AND BUNKER OILS		
26-28, gravity, bulk	04¾-05	04¾-05
32 plus, bulk	04¾-05	04¾-05
Grade C, Bunker oil (F.O.B.)	1.55-1.65	1.55-1.65
MEXICAN CRUDE AND BUNKER OILS		
*Heavy, f o b Tampico, Plus Taxes	1.15	1.15
Mexican Grade C, Bunker oil F.O.B. Tampico Taxes Paid	1.45	1.40
Mexican C, Bunker oil New Orleans	1.55	1.55

Lubricating Oils

SOUTH TEXAS

(In bulk cargoes of 40,000 to 50,000 bbls)
(Viscosity at 100°F; cold test 0)
(Tanker, F. O. B. Houston)

	Dec. 15	Dec. 8
100 Vis. No. 2 Unfilt. Pale	10	10
150 Vis. No. 2½ Unfilt. Pale	11	11
200 Vis. No. 3 Unfilt. Pale	14	14
300 Vis. No. 3 Unfilt. Pale	15	15
500 Vis. No. 3½ Unfilt. Pale	18	18
750 Vis. No. 4 Unfilt. Pale	23	23
*750 Vis. No. 2½ Filt. Pale	35	35
200 Vis. No. 5½ Red Oil	13½	13½
300 Vis. No. 5½ Red Oil	14½	14½
500 Vis. No. 6 Red Oil	17½	17½
750 Vis. No. 6 Red Oil	19	19

*Nominal

to go higher shortly. German and French buyers are operating along more extensive lines although no bulk movements were uncovered. British buyers are purchasing in a steady but light way, while the call from southern Europe has also improved. Refiners are skeptical about selling very freely at present prices. Buyers are finding more difficulty in securing their supplies and all indications point towards a general advance shortly.

Waxes have been rather flat of late, but prices were unchanged. Stocks are small and offerings somewhat lighter than a week ago. European inquiries have been confined to small quantities. Petrolatums are marking time.

California Companies Selling Blends

LOS ANGELES, Dec. 12.—It is evident that large companies intend to increase their gasoline gallonage in southern California in the immediate future and that the campaign may be accompanied by a revision upward in the price of crude oil with the present gasoline price remaining unchanged.

The Standard Oil Co. of California is advertising a new winter brand of gasoline which is sold under the old trade name Red Crown. This new product has a lower initial boiling point than the regular Red Crown gasoline. It is heavily advertised, and the Standard is gaining an appreciable increase of business in it, it is said.

It is understood that the new Standard gasoline is a blended product and that it was with the object of manufacturing it that the company has purchased large quantities of casinghead gasoline during recent months. The Shell Co. has been purchasing large amounts of casinghead for blending. General Petroleum Corp. has also been a heavy buyer. This buying has "pulled" the price. This last week, spot casinghead sold as high as 14 cents. Contracts are being made at 3 and 4 cents under the present retail gasoline price which is 14½ cents per gallon.

Some improvement in the gallonage of gasoline sold by smaller refineries in domestic market has been reported. Also that the number of bootleg peddlers is being reduced, present prices not offering the peddlers the same fancy profits which they have had during most of the year and supplies are harder to obtain. Spot U. S. Motor gasoline can be purchased from the smaller refiners in Los Angeles in tank wagon and tank car lots this week at 10 cents including tax.

Engine distillate, kerosene and lubricating oil are moving slowly. The fuel oil remains about the same.

EL CAMPO, TEX., Dec. 12.—The Texas Co. is repairing its filling station No. 1 here and replacing old pumps with new ones, according to Mauritz & Carroll.

Crude Oil Prices All Fields

EASTERN FIELDS

	1924	1923			1922	
	Dec. 15	High		Low	High	Low
Bradford-Allegany	$2.85	Feb.15	$4.25	Nov.13 $2.60	Jan.1 $4.00	July 19 $3.00
Other Pennsylvania	2.75	Feb.15	4.00	Nov.13 2.35	Jan.1 4.00	July 19 3.00
Cabell	1.45	Feb.15	2.76	Nov.13 1.20	Jan.1 2.61	July 19 1.86
Corning	1.50	Feb.15	2.30	Nov.14 1.25	Jan.1 2.40	July 20 1.75
Somerset	1.55	Feb.15	2.55	Nov.13 1.15	Jan.1 2.40	July 19 1.65
Somerset Light	1.70	Feb.15	2.80	Nov.13 1.30	Jan.1 2.65	July 19 1.90
Ragland	.90	Feb.15	1.10	July 10 .75	Jan.1 1.25	July 19 1.00

Somerset oil run prior to Oct. 1, 1923, takes price of 6 cents lower than above quotations.

CENTRAL STATES FIELDS

	1924	1923			1922	
	Dec. 15	High		Low	High	Low
Wooster	$1.40	Feb.19	$2.50	Nov.9 $1.25	Jan.1 $2.70	Sept.21 $1.90
Lima	1.58	Feb.19	2.58	Nov.9 1.43	Jan.1 2.48	July 20 1.98
Indiana	1.38	Feb.19	2.38	Nov.9 1.23	Jan.1 2.28	July 20 1.78
Princeton	1.37	Feb.19	2.37	Nov.8 1.22	Jan.1 2.27	July 20 1.77
Illinois	1.37	Feb.19	2.37	Nov.8 1.22	Jan.1 2.27	July 20 1.77
Plymouth	.75	Feb.19	1.75	Nov.9 .60	Jan.1 1.65	July 20 1.15
Canadian Petrolia	1.98	Feb.19	2.98	Nov.9 1.83	Jan.1 2.88	July 20 2.38

MID-CONTINENT AND NORTH TEXAS FIELDS

Below 30	$ .75	Currie	$1.25
30-32.9	.90	Mexia	1.25
33-35.9	1.10	Powell	1.35
36 and above	1.25		

Humble's Prices

Ranger Field		Moran Field, Wichita and Archer Counties	
Below 30	$ .90	Below 30	$ .75
30-32.9	1.10	30-32.9	.90
33-35.9	1.25	33-35.9	1.10
36 and above	1.35	36 and above	1.25

Magnolia's Price Schedule
North and North-Central Texas, Okla., and Kan.

Below 30	$ .75	Corsicana, light, Powell, Mexia	$1.25
30-32.9	.90	Corsicana, heavy	.90
33 and above	1.25	Thrall	1.00

NORTH LOUISIANA—ARKANSAS FIELDS

Caddo, 38 degrees and above	$1.35	Bull Bayou, 38 and above	$1.15
do 35 to 37.9	1.25	do 35 to 37.9	1.00
do 32 to 34.9	1.15	do 32 to 34.9	.85
do below 32	1.00	De Soto	1.20
Homer, 35 and above	1.10	Crichton	1.00
do 33 to 34.9	1.00	Bellevue	1.35
do 31 to 32.9	.90	Smackover, 25 and above	.95
do below 31	.75	do below 25 Be.	.85
Haynesville, 33 and above	1.00	Stephens 26 and above	.90
do below 33	.90	do below 26	.70
El Dorado, 33 and above	1.00	Cotton Valley	.95
do below 33	.90		

GULF COASTAL FIELDS

	1924	1923			1922	
	Dec. 15	High		Low	High	Low
Spindletop	$1.50	Mar.15	$1.75	Aug.18 $1.00	Jan.1 $1.25	Dec.30 $1.25
Goose Creek "A"	1.50	Mar.15	1.75	Aug.18 1.00	Jan.1 1.25	Dec.30 1.25
Goose Creek "B"	1.25	Mar.15	1.50	Aug.18 1.00	Jan.1 1.25	Dec.30 1.25
Sour Lake	1.50	Mar.15	1.75	Aug.18 1.00	Jan.1 1.25	Dec.30 1.25
Humble	1.50	Mar.15	1.75	Aug.18 1.00	Jan.1 1.25	Dec.30 1.25
Hull "A"	1.50	Mar.15	1.75	Aug.18 1.00	Jan.1 1.25	Dec.30 1.25
Hull "B"	1.25	Mar.15	1.30	Jan.1 .80	Jan.1 1.25	Dec.30 1.25
West Columbia	1.50	Mar.15	1.75	Aug.18 1.00	Jan.1 1.25	Dec.30 1.25
Edgerly	1.50	Mar.15	1.75	Aug.18 1.00	Jan.1 1.25	Dec.30 1.25
Vinton	1.50	Mar.15	1.75	Aug.18 1.00	Jan.1 1.25	Dec.30 1.25
Jennings	1.50	Mar.15	1.75	Aug.18 1.00	Jan.1 1.25	Dec.30 1.25
Saratoga	1.50	Mar.15	1.75	Aug.18 1.00	Jan.1 1.25	Dec.30 1.25
Orange "A"	1.50					
Orange "B"	1.25					
Pierce Junction "A"	1.50					
Pierce Junction "B"	1.25					

WYOMING FIELDS

Elk Basin	$1.20	Feb.17	$2.10	Nov.9 $ .95	Jan.1 $1.90	Aug.4 $1.20
Grass Creek	1.20	Feb.17	2.10	Nov.9 .95	Jan.1 1.90	Aug.4 1.20
Big Muddy	.75	Feb.17	1.65	Nov.9 .45	Jan.1 1.40	Aug.4 .70
Salt Creek	.85	Feb.17	1.65	Nov.9 .60	Jan.1 1.40	Aug.4 .70
Lance Creek	1.15	Feb.17	2.10	Nov.9 .80	Jan.1 1.90	Aug.4 .20
Rock Creek	.95	Feb.17	1.75	Nov.9 .60	Jan.1 1.50	Aug.4 .80
Osage	1.15	Feb.17	2.10	Nov.9 .80	Jan.1 1.90	Aug.4 1.20
Cat Creek, Mont	1.20	Feb.17	2.10	Nov.9 .95	Jan.1 1.90	Aug.4 1.20
Sunburst, Mont	.90	Feb.17	1.50	June 6 .70		

CALIFORNIA

14-19.9	$1.00	25-25.9	$1.10	30-30.9	$1.25
20-20.9	1.01	26-26.9	1.13	31-31.9	1.28
21-21.9	1.02	27-27.9	1.16	32-32.9	1.31
22-22.9	1.03	28-28.9	1.19	33-33.9	1.34
23-23.9	1.05	29-29.9	1.22	34-34.9	1.37
24-24.9	1.07			35 and above	1.40

ROSECRANS FIELD—EFFECTIVE SEPT. 24, 1924

36-36.9	$1.46
and for each increase of one full degree above 36° gravity, up to and including 41.9° gravity, 6 cents per barrel additional	
42 and above	1.82

Cargoes Clearing From N. Y.

Date	Destination	Product	Quantity
Dec. 8	Sydney (Aust.)	Ref. Pet.	4,900 cases
Dec. 8	Sydney	Naptha	1,999 cases
Dec. 1	Melbourne (Aust.)	Ref. Pet.	51,642 cases
Dec. 1	Melbourne	Gasoline	33,000 cases
Dec. 2	Morullah	Ref. Pet.	10,000 cases
Nov. 28	Canary Islands	Ref. Pet.	700 cases
Nov. 28	Canary Islands	Naptha	1,700 cases
Nov. 28	Las Palmas (C.I.)	Ref. Pet.	1,000 cases
Nov. 28	Las Palmas	Naptha	2,500 cases
Nov. 28	Accra (Afr.)	Ref. Pet.	5,200 cases
Nov. 28	Accra	Naptha	11,300 cases
Nov. 28	Saka (Afr.)	Ref. Pet.	1,700 cases

British Importations

During the week ended November 24 there were imported into the United Kingdom 36,269,884 imperial gallons of petroleum. Larger receipts were:

Consignee	Imperial Gallons	Product	Port of Origin
At London—			
Pet. Products	431,921	Gasoline	Wilhmhaven
Russian Oil Prod.	310,189	Benzine	Batoum
Russian Oil Prod.	1,887,789	Kerosene	Batoum
United Caucasian	418,259	Gasoline	Antwerp
Immediate Trans.	371,120	Kerosene	Constanza
Anglo Amer.	2,528,430	Kerosene	B. Rouge
Anglo Amer.	2,278,970	Kerosene	B. Rouge
Anglo Amer.	1,617,950	Kerosene	Batoum
Shell	2,330,538	Crude	Curacao
Shell	222,557	Lubes	San Francisco
Shell	631,013	Lubes	San Francisco
Shell	289,754	Lubes	San Francisco
At Grangemouth—			
Scottish Oils	2,840,750	Crude	Abadan
At Liverpool—			
Brit.-Mex.	158,456	Fuel Oil	New Orleans
Brit.-Mex.	273,488	Fuel Oil	Tampico
At Bristol—			
Anglo-Amer.	2,889,160	Gasoline	New York
Anglo-Amer.	1,336,100	Kerosene	New York
At Manchester—			
Anglo-Amer.	632,240	Gas Oil	New York
Shell	2,666,458	Benzine	San Pedro
At Southampton—			
Brit.-Mex.	2,013,353	Crude	Abadan
Brit.-Mex.	2,018,945	Fuel Oil	New Orleans
Anglo-Mex.	2,536,128	Gasoline	San Pedro
At Swansea—			
Nat'l Oil Ref.	1,584,150	Crude	Abadan
Nat'l Oil Ref.	2,459,535	Crude	Abadan

Los Angeles Shipments Show Decline

LOS ANGELES, Dec. 11.—Petroleum shipments from this harbor during the week ending Dec. 5 amounted to 1,197,388 barrels. This amount of oil was handled by 16 tankers. Six carried crude oil, 7 took fuel oil, two took gasoline, and 1 had a mixed load. The previous week's shipments totaled 2,223,115 barrels.

The bulk of the shipments were absorbed by the Pacific coast domestic trade, its call being for 812,431 barrels. Only 2 tankers cleared for the Atlantic coast trade. The shipments were as follows:

Nov. 29

Lebec to Seattle, 72,498 barrels fuel for General Petroleum Corp.

D. G. Schofield to Richmond, 79,600 barrels crude for Standard Oil Co.

Emidio to London, 74,189 barrels gas for Tankers, Ltd.

Nov. 30

None.

Dec. 1

Los Angeles to Martinez, 75,760 barrels crude for Shell Co.

Frank H. Buck to Avon, 63,858 barrels fuel for Associated Oil Co.

Lubrico to Richmond, 70,420 barrels crude for Standard Oil Co.

(Continued on third column)

Refiners', Compounbers' Supplies

Following are the average market prices for the week on materials used by refiners and Compounders f. o. b. shipping point as effective this date.

	Dec. 15	Dec. 8
Refiners' Supplies		
Soda Ash light 58% bags cwt.	-$1.38	$-1.38
Silicate of Soda 60 deg. Drums.....cwt.	-1.70	-1.70
Sal Soda wks.....cwt.	1.10-1.25	1.10- 1.25
Caustic Soda 76% solid.cwt.	-3.10	- 3.10
Chloride of Lime.....cwt.		
Works.....	1.90-2.10	1.90- 2.10
Sulphuric Acid 60 deg. tank cars f. o. b. shipping point.....per ton	9.00-10.00	9.00-10.00
Compounders' Supplies (Open Market)		
Vegetable Oils—		
‡Linseed carloads Spot...gal.	-1.11	-1.05
‡December.....	-1.11	-1.05
‡January.....	-1.11	-1.05
‡Feb.-April.....	-1.12	-1.06
Tanks, spot.....	-1.05	- .99
Less carload Spot.....gal.	-1.14	-1.08
Less than 5 Bbls. Spot.....	-1.17	-1.11
Boiled, tank Spot.....	-1.07	-1.01
Boiled, carloads Spot.....gal.	-1.13	-1.07
*Soya Bean Spot, Tanks...lb.	- .11¼	- .11¼
Animal Oils—		
English Degras.....lb.	-.04½	-.04½
Domestic Degras, bbls., carloads.....lb.	-.04¼	-.04¼
*Horse.....lb.	-.09½	-.09½
Oleic Acid—		
Dist.....lb.	-.11	-.11
Saponified.....lb.	-.11	-.11
Lard Oils—		
Prime Winter Strained.. 1 to 1½ffa.40‡45c.t.lb.	.18¼	$.18½
Extra Winter Strained.. 2 to 4½ffa.40/45c.t.lb.	.17¼	.17¼
Extra..... 4 to 5 ffa.40/45c.t.lb.	.15¾	.15¾
Extra No. 1. 7 to 10 ffa.40/50c.t.lb.	.13¾	.13¾
No. 1.....15 to 18 ffa.40/45c.t.lb.	.13	.13
No. 2.....22 to 23 ffa.40/45c.t.lb.	.12¼	.12¼
Prime Edible Tallow under 1¾ ffa. 40/45c.t.N.Y.....lb.	-.11	-.11¼
Tallow acidless.....lb.	-.12¾	-.12¾
Lard Stearine.....lb.	-.18	-.18
Oleo Stearine.....lb.	-.11¾	-.11¾
Neatsfoot Oil—		
Pure.....bbls.-lb.	.15¾	.15¾
Extra.....do lb.	.13¾	.13¾
No. 1.....do lb.	.13	.13
Cold pressed.....lb.	.18½	.18½
Fish Oils—		
Menhaden Oil Light pressed.....gal.	.70-.72	.70-.72
White.....gal.	-.75	-.75
Yellow bleached.....gal.	-.73	-.73
*Herring tank cars coast.....gal.	-.40	-.40
Whale, extra winter bleached.....gal.	-.80	-.80
Seal.....gal.	Nominal	
Naval Stores—		
Turpentine, N. Y.....gal.	.83½	.81
Turpentine†.....gal.	.77	.75½
Rosin B. N. Y.....Bbl.	7.65	7.35
Rosin F. N. Y.....Bbl.	7.65	7.35
Rosin B†.....Bbl.	6.40	6.10
Rosin F†.....Bbl.	6.40	6.10
Rosin Oil 1st run.....gal.	.45	.45
Rosin Oil 2nd run.....gal.	.47	.47
Pine Tar—		
Kiln Burnt.. .....Bbl.	12.00	12.00
Retort..... .....Bbl.	11.50	11.50

†Savannah, Ga. market.
*Nominal.

Agwistone to Bayonne, 105,000 barrels crude for Standard Oil Co.

Dec. 2

Dilworth to Portland, 62,155 barrels fuel for General Petroleum Corp.

Dec. 3

None.

Dec. 4

D. G. Scofield to Richmond, 79,459 barrels crude for Standard Oil Co.

Kanawha to San Diego, 55,000 barrels fuel for U. S. Navy.

Tejon to Seattle, 63,233 barrels fuel for Shell Co.

Cathwood to Martinez, 78,068 barrels crude for Shell Co.

G. H. Smith to Antofogasta, 129,000 barrels fuel for Standard Oil Co.

H. C. Folger to Philadelphia, 76,768 barrels gas for Sun Oil Co.

Dec. 5

Frank G. Drum to Avon, 66,000 barrels fuel for Associated Oil Co.

La Purisma to San Diego, 27,300 barrels fuel, 14,700 barrels gas, 2,450 barrels kerosene, 2,431 barrels distillate.

New England Refinery Prices

(F. O. B. Boston and Fall River)

	Dec. 15	Dec. 8
U.S.Motor gasoline (gal.)..	10½-10⅞c	10¼-10½c
30-32 gas oil (gal.).....	5¼- 5½c	5¼- 5½c
38-40 distillate (gal.).....	6c	6c
40-43 w.w.kerosene.....	7-8c	7½- 8c
Fuel oil (Bunker C) (bbl.).	$1.80	$1.80

Chemicals Are Strong; Linseed Oil Higher

New York, Dec. 15.—Following is a review of the markets for oils and supplies used in compounding and refining:

Linseed Oil

Four cents a gallon higher, reflecting sharp jump in flaxseed. Crushers accepting business subject to confirmation. Local observers predicting $1.25 oil by next May. Spot oil now $1.11 per gallon carlots.

Animal Oil

Movement, routine. Buyers operating conservatively. More interest in degras but demand lags. Neatsfoot oil firm. Lard oil marking time. Demand for stearine slightly better. Tallow oil quiet.

Fish Oils

Crude menhaden firm at 58 to 60 cents a gallon, tank cars at the factory. Light pressed menhaden moving more freely at unchanged prices. Whale oil flat but steady. Demand for sperm oil better.

Soda Ash

Good demand for delivery over first half of 1925. Pronounced falling off for spot goods. Prices unchanged and firm. Export inquiry good.

Caustic Soda

Demand improving slowly. Spot buying light. Interest is chiefly in futures.

Bleaching Powder

Demand is more spirited, but chiefly on contract. Spot buying is disappointing. Stocks on hand are small. Prices holding steady.

Sulfuric Acid

Demand picking up. Stocks in firm hands, and few factors are pressing spot sales. Little goods in possession of consumers.

OIL STOCKS AND FINANCES

Marland Oil Increases Working Capital

NEW YORK, Dec. 13.—Current sales more than double current liabilities are shown in the balance sheet of the Marland Oil Co. and subsidiaries as of Sept. 30. Net working capital on that date was $10,971,803 as compared with $5,941,574, Dec. 31, 1923. Consolidated balance sheets as of the two dates follow:

ASSETS

	1924	1923
Cash	$2,722,381	$3,477,640
Bills receivable	204,498	99,220
Accounts rec.	4,157,236	3,736,570
Oil inventory	11,203,599	5,702,003
Materials, supplies	1,916,181	1,301,623
Prepaid ins., int.	136,153	259,741
Interest rec.	7,389	2,182
Misc. items	136,031	128,259
8% bonds purchased	108,000	591,000
Notes accts, rec. officers and employees	169,013	96,067
Sundry debtors	232,975	.....
Unadjusted debits	636,997	1,043,504
Stock owned by subs	853,352	689,537
Inv. and advances	11,357,139	8,236,932
Fixed assets	71,358,050	63,410,653
Total	$105,237,003	$88,793,966

LIABILITIES

	1924	1923
Bills payable	$7,050,945	$7,156,111
Accounts payable	2,122,474	1,294,665
Interest accrued	338,250	314,898
Funded debt	5,101,000	5,643,000
Purchase money obli	3,713,411	4,035,236
Contingencies	200,000	.....
Deprec., depl., etc	13,928,960	11,924,589
Stock of subsi. held by minority interests	186,195	198,118
Capital and surplus	*72,595,765	58,227,348
Total	$105,237,003	$88,793,996

*Net equity represented by 1,549,897 shares issued.

Stock of Fuel Oil Stolen

SPRINGFIELD, ILL., Dec. 12.—Loss of 10,000 gallons of fuel oil from an underground storage tank at the new Court of Honor building here, has puzzled police. No leaks were found in the tank after the oil was reported missing so it is believed thieves disguised as building laborers, pumped out the oil at night.

Ohio Fuel Supply Co. Income Is Higher

PITTSBURGH, Dec. 12.—Ohio Fuel Supply Co. reports for the nine months ended Sept. 30 net income of $3,431,726 or $2.16 a share as compared with $2.27 a share in the corresponding period of 1923. In the third quarter of this year the company netted $351,717 or 22 cents on each of the 1,585,040 shares of stock outstanding, as compared with 48 cents a share in the second quarter and a deficit totaling $79,889 in the third quarter of 1923.

Reports of other companies which with the Ohio Fuel Supply have been merged into the Ohio Fuel Corp. were as follows:

Manufacturers Light & Heat Co. reported gross of $9,766,089, net after expenses $1,011,392 and net income $1,216,016.

Union Natural Gas Co. showed gross of $6,259,710 and net of $595,726 after interest, taxes, depreciation and depletion. Other income was $356,765 making gross income of $952,491. Interest was $35,766 leaving net income of $916,725.

Pacific's Net Income Higher This Year

NEW YORK, Dec. 13.—Pacific Oil Co. reports a considerably higher income in the first nine months of this year as compared with the first nine months of 1923, the average being $2.42 a share after all charges including federal taxes as against $1.96 last year. This third quarter income was slightly less than in the second quarter being 76 cents a share as against 82 cents. Net income in the third quarter of 1923 averaged 66 cents a share.

Income accounts for the first nine months of 1924 and 1923 compare:

ASSETS

	1924	1923
Real estate, pipe lines, leases, etc	$307,561,147	$291,052,553
Investments	63,994,379	63,737,573
Insurance fund	2,092,954	2,235,050
Cash	7,984,275	7,999,607
Accts, notes receivable, less reserve	10,791,891	9,585,387
Inventories	22,233,665	23,564,717
Employes stock subsc.	.....	979,951
Adv. payments	592,478	810,513
Marketable sec	4,161,418	4,219,580
Deferred items	9,558,655	8,180,869
Total	$428,970,862	$412,365,800

LIABILITIES

	1924	1923
Common Stock*	$204,452,441	$204,052,441
Preferred Stock	18,914,900	19,278,600
Minority stockholders' int. in subs	109,840	109,990
Deprec., depl., amort., and other reserves	72,844,938	70,690,881
National Steel Car equip. trust notes	6,000,000	.....
Funded debt, purchase money obligations	91,530,787	78,487,074
Notes payable	374,565	11,600,000
Accounts payable	7,960,077	6,522,924
Accruals and misc.	3,297,321	2,274,095
Surplus	23,885,993	19,349,795
Total	$428,970,862	$412,365,800

*Represented by 4,491,892 shares of no par value.

Gulf Coastal Lubes Firm

HOUSTON, Dec. 13.—Red oil of 200 viscosity has advanced ½ cent and other grades of Gulf Coastal lubricants are firm. Jobbers are taking out satisfactory quantities of oil on contract and spot shipments are reported to be good.

Financial Notes

West Coast Oil Co.—This Pacific coast producing company has declared an extra dividend of $20 a share payable Dec. 31.

British-American Oil Co.—This Canadian marketing company, with headquarters in Toronto, has declared an extra divided of 50 cents a share.

Prairie Oil & Gas Co.—Stockholders have approved proposition to change par value of stock from $100 to $25 a share and issue four shares of new stock for one of the old. They also authorized increase in capital stock from $60,000,000 to $70,000,000. Of the new stock about $5,000,000 will be sold to employes on an easy payment plan and the remainder will be held in the treasury.

Marland To Retire All Its 7.5% Bonds

NEW YORK, Dec. 5.—Marland Oil Co. has announced it will redeem on Feb. 1, 1925 at 105 and accrued interest all of its outstanding 7½ per cent Series B sinking fund gold bonds, due April 1, 1931. The par value of the outstanding bonds totals $2,295,000. On April 1 Marland will retire $2,710,000 8 per cent sinking fund bonds.

Retirement of these two issues was provided for in the recent issue of $20,000,000 two-year 5 per cent notes which were sold privately.

Cleveland Stock Market

December 12

	Par	Bid	Asked	1923 High	1923 Low
Canfield Oil Co.	$100	.....	.....	.....	.....
do pfd	100	.....	100	100	95
Fred G. Clark Co.	10	3	3¼	4	2
National Refin. Co.	25	39½	41	39	33¾
do pfd	100	127¼	.....	130	116
Paragon Refin. Co.	25	6	7¼	6	5¼
do pfd	100	.....	.....	75	40

x—Ex dividend

Oil Dividends

	Amount	Payable	Stock of Record
Associated Oil q	37½c	Jan. 26	Dec. 31
British-Amer. q	50c	Jan. 2	Dec. 22
do extra	50c	Jan. 2	Dec. 22
Canfield Oil q	$1.50	Dec. 31	Dec. 20
do pfd. q	$1.75	Dec. 31	Dec. 20
Gulf Oil q	37½c	Jan. 1	Dec. 20
Lone Star Gas q	2%	Dec. 31	Dec. 18
Magnolia Pet. q	$1	Jan. 5	Dec. 23
Humble O. & R. q	30c	Jan. 1	Dec. 17
Indiana P. L. q	$1	Feb. 14	Jan. 20
Mexican Eagle 1st pfd	3½%	Dec. 31	.....
Mexican Pet. q	$3	Jan. 20	Dec. 30
do pfd	$2	Jan. 20	Dec. 30
N. England Fuel q	25c	Jan. 2	Dec. 17
Pan-Amer. P. & T. q	$1	Jan. 20	Dec. 30
do B q	$1	Jan. 20	Dec. 30
Salt Creek Cons. q	15c	Jan. 1	Dec. 20
West Coast extra	$20	Dec. 31	Dec. 20

Transactions In Oil Shares on New York Stock Exchange

1923 High	1923 Low	1924 High	1924 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions week ended Dec. 13 Sales	First	High	Low	Last	Ch'ge
.....	.....	43	25	(sh) 200,000	N.P.	American Republics	.....	.....	100	39	39	39	39	0
29½	24⅞	34⅝	27½	$ 56,000,000	$25	Associated Oil	37½cQ	Oct. 25, 24	10,500	32	32	30	31¾	— ¼
160	98¾	140½	78½	50,000,000	100	Atlantic Refining	.....	June 16, 24	5,200	90	90	85⅝	89	—1½
120	115	118	108	20,000,000	100	do pfd	$1¾Q	Nov. 1, 24						
35	9⅞	21⅝	14	13,000,000	25	Barnsdall Corp. A	.....	Apr. 30, 21	28,200	19½	21⅜	18⅞	20¼	+1¼
22	6	16¾	10	3,713,275	25	do B	.....	Apr. 30, 21	2,800	14⅞	15⅞	13⅝	13⅝	— ⅜
									1,100	1¼	1⅜	1¼	1⅜	— ⅛
9⅛	1¼	5	1	(sh) 150,000	N.P.	Caddo Central O. & R	.....	.....						
29⅜	17⅝	29¼	19½	$ 17,377,000	$25	California Petroleum	43¾cQ	Dec. 1, 24	15,000	23⅜	23⅜	21½	22¾	— ¼
110½	90½	107	92½	11,955,100	100	do pfd	$1¾Q	Oct. 1, 24	800	97⅜	97¼	96½	96½	—1¾
62¼	22¾	40¼	22⅝	(sh) 1,357,800	N.P.	Cosden & Co	.....	Aug. 1, 23	19,600	26¼	26½	23¾	25⅞	— ¼
90⅜	83¼	95	83½	$ 6,998,000	$100	do pfd	$1¾Q	Dec. 1, 24	600	85	85	84	84	0
54	23	59⅜	31⅜	19,831,000	100	General Asphalt Co	.....	.....	70,400	56	*59⅜	54⅝	58⅛	+2⅜
83	60	96	71½	7,416,000	100	do pfd	$1¼Q	Dec. 1, 24	1,500	94¾	*96	94½	94½	+ ½
		45	38¾	28,856,050	25	General Petroleum	50cQ	Dec. 15, 24	23,200	42⅞	43	40⅜	41½	—1⅜
.....	.....								9,200	76	78	70½	77¾	+1⅝
78	40¾	82½	61	25,000,000	100	Houston Oil Co	.....	.....	27,700	11⅜	12⅛	9¼	10¾	— ⅜
11¼	3⅜	13½	5¾	(sh) 450,000	N.P.	Independent Oil & Gas	25cQ	Sept. 30, 24						
19	1	2⅜	¼	$ 5,000,000	$25	Indiahoma Refining Co	.....	July 1, 21						
8½	3½	7½	3¾	7,830,450	10	Indian Refining Co	.....	Dec. 15, 20	2,000	5	5	4¾	5	0
49½	49½	75	60	2,296,400	100	do pfd	.....	Dec. 15, 21	100	75	*75	75	75	+9
19¼	7⅜	16⅞	10½	1,094,236	N.P.	Invincible Oil Corp	.....	.....	16,600	14¾	14⅞	13⅛	14⅞	+ ⅜
3½	¾	1	¾	$ 1,697,610	$10	Kansas & Gulf Corp	.....	.....	1,500	⅜	⅜	¼	⅜	0
28⅜	16	37½	24⅝	(sh) 268,850	N.P.	Maracaibo Oil	.....	.....	7,000	28⅞	28⅞	26	28¼	— ⅜
59⅜	17½	42	29	(sh) 1,549,190	N.P.	Marland Oil Co	.....	July 1, 23	92,900	38⅛	38¼	35⅜	38	— ⅜
293	182	.....	.....	$ 45,942,800	$100	Mexican Petroleum Co	$3Q	Oct. 20, 24						
105¼	100¼	.....	.....	12,000,000	$100	do pfd	$2Q	Oct. 20, 24						
23¾	5¾	25¾	14¼	(sh) 945,939	N.P.	Mexican Seaboard Oil	50cQ	Nov. 15, 24	14,000	19⅜	20¾	19	20	+ ½
12¼	3½	6⅞	1	$ 29,799,450	$10	Middle States Oil Corp	.....	July 1, 23	12,300	1½	1⅝	1⅜	1½	0
67	31	40	31½	$ 39,626,000	25	Ohio Fuel Supply Co	62½cQ	Oct. 15, 24						
52⅛	31¼	58¼	45	(sh) 3,500,000	N.P.	Pacific Oil Co	$1S.A.	July 21, 24	87,400	54	54	49	52¼	—1⅜
93½	53	61¼	42⅛	$ 48,292,450	$50	Pan American P. & T	$1Q	Oct. 20, 24	14,400	58½	58½	54¾	58	— ⅜
86	50½	59½	41¼	83,221,500	50	do Class B	$1Q	Oct. 20, 21	60,100	56⅜	57	53½	57	+ ⅜
6¼	1¼	3½	1⅜	(sh) 198,770	N.P.	Panhandle P. & R	.....	.....	1,600	2¾	3⅜	2¾	3⅜	+ ⅜
68	27½	40¼	29¾	$ 3,855,500	$100	do pfd	.....	July 2, 23	200	38½	38½	38½	38½	+1⅜
69⅝	19¾	42¾	28½	(sh) 1,849,848	N.P.	Phillips Petroleum	50cQ	Oct. 2, 24	46,900	35½	36⅜	33¼	36	+ ½
6	1⅜	4½	1½	$ 29,622,925	$25	Pierce Oil Corp	.....	.....	4,800	1⅝	1¾	1½	1¾	0
44½	16	39¾	20	15,000,000	100	do pfd	.....	Feb. 1, 22	900	25⅞	26	23½	24	—1
58⅛	17	43½	22¾	11,467,850	50	Producers & Refiners	.....	Sept. 15, 23	7,600	26⅝	28	25	28	+1⅝
49½	36	47½	22	2,845,350	50	do pfd	87½cQ	Nov. 3, 24	400	44½	44¾	44¼	44¼	+ ¼
32	16¾	28	20	71,316,575	25	Pure Oil Co	37½cQ	Dec. 1, 24	53,100	30	30¼	27	29½	— ½
100	82½	105¼	92	13,000,000	100	do 8% pfd	$2Q	Oct. 1, 24	600	105	*105¼	104¾	105	0
53⅜	40½	59½	40¾	(sh) 727,550	13.40	Royal Dutch, N. Y. shares	$3.18½	Aug. 12, 24	17,600	49	49¾	47	48½	— ¼
41¾	29⅛	41½	33	(sh) 141,395	£2	Shell Transport & T	$1.07½	July 23, 24	400	40	40	38⅞	38⅞	—1⅛
19¼	12⅜	22	15¾	(sh) 10,000,000	N.P.	Shell Union Oil Corp	25cQ	Sept. 30, 24	91,600	21⅛	*22	19⅝	21⅜	+ ½
95	89½	98⅛	91½	$ 20,000,000	$100	do pfd	$1½Q	Nov. 15 24	1,200	98	98½	98	98⅛	+ ¼
16	6½	19	10⅜	7,204,710	10	Simms Petroleum Co	.....	.....	26,800	17⅝	17⅞	16⅜	17¾	+1⅜
39⅛	16	27⅜	15	(sh) 4,480,957	N.P.	Sinclair Consolidated	.....	May 31, 24	37,600	16⅛	16½	15½	16½	+ ¼
99⅛	80¾	88½	75	$ 18,914,900	$100	do pfd	$2Q	Nov. 15, 24	600	78¼	78½	78	78	—1
35	12⅛	29	17⅜	20,579,090	25	Skelly Oil Co	.....	.....	8,200	21	22	19⅜	22	+1⅜
64½	47⅛	68⅛	55½	234,317,800	25	S. O. California	50cQ	Dec. 15, 24	41,600	62	62⅜	58	61½	— ½
44⅛	30⅞	42¾	38	506,051,775	25	S. O. New Jersey	25cQ	Dec. 15, 24	30,400	37¼	37⅝	35¾	37⅜	— ⅛
118¼	114¾	119⅛	115⅞	199,972,900	100	do pfd	$1¾Q	Dec. 15, 24	200	117	117¼	116⅞	117	+ ¼
6¾	2	8⅛	2⅜	(sh) 1,087,228	N.P.	Superior Oil Corp	.....	Dec. 20, 20	7,200	4½	4¾	4¼	4⅜	0
52⅞	34⅝	45⅜	37¾	$164,450,000	$25	The Texas Co	75cQ	Sept. 30, 24	28,600	43⅛	43⅜	41¼	42⅞	— ⅝
24¾	5½	15¼	8	8,380,340	10	Texas Pacific Coal & Oil	.....	June 30, 23	10,600	11	11¾	10⅛	11¾	+ ⅜
144	94	151	118¼	50,004,000	100	Tide Water Oil Co	$1Q	Sept. 30, 24	500	127⅞	128	123½	126¾	—1¼
14½	1¼	6¼	3¾	(sh) 2,957,529	N.P.	Transcontinental Oil Co	.....	.....	11,200	4	4	3⅞	4	0
.....	.....	39	35	$ 40,480,800	$25	Union Oil of Califorpia	45cQ	Oct. 28, 24	39,600	36⅞	37½	35	36½	— ½
99¾	81	129	94	$ 18,040,000	$100	Union Tank Car Co	$1¼W	Dec. 1, 24						
114	100	116¾	106½	12,000,000	100	do pfd	$1¾Q	Dec. 1, 24						
30⅜	20	29⅜	23¾	(sh) 460,000	N.P.	White Eagle Oil & Ref	50cQ	Oct. 20, 24	4,500	26¾	26¾	25¾	26	— ½

*New High †New Low xEx-Dividend Total Sales 998,700

Standard Oil Stock Traded In New York Curb Market

1923 High	1923 Low	1924 High	1924 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions week ended Dec. 12 Sales	First	High	Low	Last	Ch'ge
19¾	13½	19¼	14¾	£3,000,000	£1	Anglo American	55cS.A.	May, 15, 24	11,500	17⅞	18⅛	17⅜	17½	— ⅜
7⅛	2½	4⅞	2⅜	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	1,900	2⅜	2½	†2⅜	2½	0
150	108	265	155	$ 1,000,000	$100	Borne-Scrymser	$4S.A.	Oct. 15, 24						
94½	69	85½	51	10,000,000	50	Buckeye Pipe Line	$1Q	Dec. 15, 24	440	58½	60	58	59¼	—2¾
.....	.....	52	47½	3,000,000	25	Chesebrough Mfg. Co	62½cQ	Sept. 30, 24	200	49	49	48⅞	48⅞	— ⅜
118	110	115	112½	1,000,000	100	do pfd	$1¾Q	Sept. 30, 24						
50	32¼	54⅞	39¾	10,000,000	25	Continental Oil	50cQ	Dec. 15, 24						
47½	15	20	11¼	1,500,000	25	Crescent Pipe Line	.....	Sept. 15, 23	800	13	13	12⅜	12⅜	0
168	85	149	110½	3,000,000	100	Cumberland Pipe Line	$3Q	Dec. 15, 24	70	136	137½	135½	135½	
117	87	105	77	5,000,000	100	Eureka Pipe Line	$2Q	Oct. 31, 24	30	82	82	81	81	—3
78	55	69¾	52	16,000,000	100	Galena Signal Oil	$1Q	Sept. 30, 24	190	59	59	58	58	—3
105	104	106	100½	4,000,000	100	do new pfd	$2Q	Sept. 30, 24						
116	108	116	103½	2,000,000	100	do old pfd	$2Q	Sept. 30, 24						
41¼	28	43¾	30	43,750,000	25	Humble Oil & Ref	30cQ	Sept. 1, 24	10,100	39⅝	40¼	38	39	—1
171	115	161	120	20,000,000	100	Illinois Pipe Line	$6S.A.	June 30, 24	60	128½	130	127	127	0
183	92	119	98½	39,222,750	25	Imperial Oil Coupons	75cQ	Dec. 1, 24	1,960	112	112½	109½	110	—1¾
103	78	100	66	5,000,000	50	Indiana Pipe Line	$2Q	Nov. 15, 24	150	73	73	71	71	—4
24¾	13¼	24	16¾	(sh) 7,118,138	N.P.	International Petroleum	25c	Nov. 29, 24	34,900	23¼	23⅜	20⅞	22⅞	— ⅜
168	123	162	122	$188,000,000	100	Magnolia Petroleum	$1Q	Oct. 5, 24	70	137	137	135	135½	—2
29	19½	25⅞	20⅝	6,362,500	12½	National Transit	50cQ	Dec. 15, 24						
138	70	97	54½	5,000,000	100	New York Transit	50cQ	Oct. 15, 24	80	62	62	61	61	—4½
109½	90	107½	72	4,000,000	100	Northern Pipe Line	$3S.A.	July 1, 24	50	78	78	75	75	—10
85¾	48¾	79½	55	60,000,000	25	Ohio Oil Co	50cQ	Sept. 30, 24	3,200	63¼	63¾	60½	61¾	—3
45¾	10½	43	27	10,000,000	25	Penn.-Mex. Fuel	.....	.....	500	32⅛	33	32⅛	32½	+ ½
700	152	269	193	60,000,000	100	Prairie Oil & Gas	$2Q	Oct. 31, 24	5,340	204	204	196	200	—3½
355	93	111	100	81,000,000	100	Prairie Pipe Line	$2Q	Oct. 31, 24	1,300	106¾	106¾	104	105½	— ¾
212½	161	230	175	4,000,000	100	Solar Refining Co	$5S.A.	Dec. 20, 24	80	206½	206½	201	201	—5
116	87	100	80¾	10,000,000	100	Southern Pipe Line Co	$2Q	Dec. 1, 24	140	85	86	84	85	+2
195	100	171	117	20,000,000	100	South Penn Oil Co	.....	Sept. 30, 22	470	135	135	125	129	—4
88¼	66½	89	70	3,500,000	100	Southwest Pa. Pipe Lines	$2Q	Oct. 1, 24	40	71	72	71	72	—6
69⅞	49⅜	68⅜	54½	221,706,668	25	S. O. Indiana	62½cQ	Dec. 15, 24	59,400	60⅛	60½	57⅞	58¾	—1⅝
57½	36½	50¼	32¾	8,000,000	25	S. O. Kansas	.....	June 16, 24	3,200	36	36⅜	34¾	35	—1½
133	80	120	101	16,784,047	25	S. O. Kentucky	$1Q	Oct. 1, 24	1,900	119⅞	119⅞	117½	118	—1⅞
285	186	262	198	8,000,000	100	S. O. Nebraska	$5S.A.	Dec. 20, 24	190	246	247½	242	242	—2
48¾	35⅛	55¾	37¾	225,324,650	25	S. O. New York	35cQ	Dec. 15, 24	10,900	43⅜	43½	41½	42	—1½
320	270	377½	275	14,000,000	100	S. O. Ohio	$2½Q	Oct. 1, 24	160	349	350	335	340	—10
118	116	125½	115	7,000,000	100	do pfd	$1¾Q	Dec. 1, 24	130	115¾	116½	115¾	116½	+ ½
839	21	81	22	1,722,931	100	Swan & Finch	.....	Nov. 1, 19	190	24	24	23½	23½	—1¾
53¾	35½	83⅜	56½	61,523,075	25	Vacuum Oil Co	50cQ	Dec. 20, 24	9,800	80½	80⅞	77	78½	—1⅝
28	19	30	25½	100,000	10	Washington Oil Co	.....	Jan. 31, 22						

HSH-340-VENT VALVE

A double acting vent valve that permits free flow of air to tank as contents are withdrawn and expulsion of air as tank is filled. Poppets have ground seats insuring an air tight tank, Valves have wire mesh screens to prevent back fire; any pressure or vacuum can be maintained.

HYDE-SCHNEIDER-HALEY MFG. CO.

ROCKFORD -:- ILLINOIS

Complete Equipment for Filling Stations, Bulk Stations and Oil Distributors

QUICK SHIPMENTS

Canfield Oil Co. — Quality & Experience Since 1890

Premium Motor & Tractor Oils

Canfield Castor Machinery Oils

Canfield Cup Grease

P. O. C. Gear Compound

Canfield Auto Soap

Canfield Anti-Rosin Belt Dressing

Canfield Oil Co. Cleveland

New York Curb Bonds

Week Ended Dec. 12

	High	Low	Last	Ch'ge
Anglo-Amer. 7½s	101⅛	101	101	0
Cities Service 7s C	108¼	107½	108⅛	+ ½
do 7s D	98	97¾	98	
Gen. Petr. 6s	100⅞	100¼	100½	— ⅝
Gulf Oil 5s	98⅝	98⅜	98⅜	0
do 5½s 28	101½	101½	101½	— ⅛
Pure Oil 6½s	99	98	98	— ¾
Sinclair Con Oil 6s	98⅝	98⅜	98½	
S. O. N. Y. 7s 25	100⅛	100	100	— ⅝
do 7s 26	105⅛	105⅛	105⅛	0
do 7s 27	105⅛	105⅛	105⅛	0
do 7s 28	105⅛	105	105	0
do 7s 29	105⅜	105⅛	105⅛	0
do 7s 30	105⅜	105⅛	105⅛	0
do 7s 31	105⅛	105⅛	105⅛	0
do 6½s	107⅛	106⅝	106⅞	— ⅛
Sun Oil 5½s	96¾	95¾	96⅛	0
Tidal Osage 7s	104½	104	104¼	— ¼
Union Oil Cal. 6s 25	100⅝	100⅝	100⅝	0
Vacuum Oil 7s	107¼	106⅞	107¼	+ ¼

New York Bonds

Week Ended Dec. 13

	High	Low	Last	Ch'ge
Atlantic Refg. debs 5s	98⅞	98⅝	98⅞	+ ⅛
Barnsdall Corp. 8s	102½	101⅞	102½	+ 1
Cal. Petr. sf 6½	101¼	101	101	— ⅛
Empire G. & F. 7½s	97	96½	96¾	+ ⅛
Humble O. & R. 5½s	99⅞	99½	99½	— ⅛
Marland 8s ser A	106⅛	106⅛	106⅛	0
do 7½ ser	105⅜	105⅜	105⅜	—¼
Pan Amer. Pet & Trans. 7s	104¾	104½	104⅝	+ ⅛
Pierce Oil debs	103	102½	103	+ ⅜
Prod. & Ref. 8s	114	110½	110½	0
Sinclair Con. col	88¾	87¼	88	— ⅜
do 6½s	83¾	82⅜	82½	— ½
Sinclair Crude 6	100½	100	100⅛	+ ⅛
do 5½s	100⅜	99⅞	99⅞	+ ⅜
Sinclair P L sf 5s	83⅞	83	83	+ ⅛
Tidewater Oil 6½	103¼	102½	103¼	+ ⅜
Union Oil of Cal. 6s	103	102⅜	102⅜	— ½
Union Tank Car 7s	103⅞	103¼	103¼	— ⅝

New York Curb Market

1923 High	1923 Low	1924 High	1924 Low	Par Value	Stocks	Transactions Week Ended Dec. 12 Sales	First	High	Low	Last	Ch'ge
10	4¼	7	4	10	Ark. Nat. Gas	300	5¼	5½	5¾	5½	0
1½	.65	1⅜	.75	1	Boston & Wyo.						
7⅜	3⅛	6⅜	2¾	25c	Carib. Synd.	5,500	4	4⅛	3¾	3¾	— ⅛
195	128	190	132	100	Cities Service	1,110	168	170	166	170	+2
70	64¼	82⅞	67¾	100	do pfd.	1,800	81	81	80¾	81	+ ⅛
6⅜	5⅞	7¾	6⅛	10	do pfd. B	2,500	7½	7⅝	7½	7⅝	+ ⅛
19⅜	12⅝	19	13¼	10	do Bkrs. Sh.	1,200	16¾	17	16¾	16¾	— ⅛
7⅝	1½	10⅝	2⅛	N.P.	Creole Synd.	15,200	9⅞	*10⅜	9¾	10⅛	+ ⅛
18½	5	8	3	N.P.	Derby O. & R.						
49½	22	34¼	17½	N.P.	do pfd.	200	28	28	28	28	0
1	.10	.60	.12	5	Federal Oil	2,000	.20	.22	.20	.22	+ ⅛
2⅛	.28	.60	.15	10	Glenrock Oil	1,000	.17	.17	.17	.17	—1
68¾	45¾	67⅞	56¾	25	Gulf Oil Corp.	6,700	65⅝	66½	64⅛	65	— ½
9⅛	1	2⅝	.87	N.P.	Gulf State O.& R.						
4	1¾	7	1¾	N.P.	Kirby Petroleum	63,000	4¼	*7	3⅞	5⅜	+1
		6⅝	2¾	N.P.	Lago Petroleum	113,000	6⅜	*6⅝	5⅝	6⅛	—
5⅛	1½	4⅞	2	N.P.	Marland of Mexico						
20¼	12⅞	20¾	16	10	Mountain Prod.	4,900	19	19	18½	18¾	— ¼
15¼	12⅜			5	Mutual Oil Co.						
15½	8⅛	14	9⅛	5	do cfts.	40,000	12	12¼	11¼	11⅝	— ⅛
6⅛	3½	6¼	3¾	5	New Bradford	1,400	3⅞	3⅞	†3¾	3¾	— ⅛
52	15⅛	44	18½	10	New England Fuel	900	21	21	19	19	—3
21⅜	5	14	8⅛	25	New York Oil	300	8½	8½	†8⅛	8⅛	— ⅛
1	.45	.80	.50	10	Omar O. & G.						
13	¾	3½	.90	N.P.	Peer Oil Corp.	1,400	1⅝	1⅝	1⅜	1½	— ⅛
14¾	9¼	17¾	12¼	10	Pennok Oil	2,600	17½	17½	16⅛	16⅛	—1½
		57¾	53¾	25	Red Bank Oil	2,400	25⅜	25⅜	24¼	24½	—1⅝
6⅞	2	5⅜	3⅜	N.P.	Ryan Consolidated	1,000	3⅜	3⅞	3½	3½	0
14	6¼	10½	6⅜	10	Salt Creek Cons.	5,800	6½	6½	†6⅜	6⅜	— ⅛
25¼	15¾	27½	19⅛	10	Salt Creek Prod.	7,100	24⅝	24⅞	24	24	— ⅝
4⅞	.75	2½	.80	5	Sapulpa Refining						
4	.65	1½	.30	5	Seaboard O. & G.						
13½	6	16	8	10	Tidal Osage						
		154	130¼	100	Union of California						
10⅞	4	8⅜	4⅝	5	Wilcox O. & G.	6,000	6⅜	6½	6	6	— ¼
		13⅜	5	N.P.	Woodley Petroleum	1,000	6⅞	7	6¾	6¾	— ⅛

Pittsburgh Stock Exchange

1923 High	1923 Low	1924 High	1924 Low	Par Value	Stocks	Transactions Week Ended Dec. 12 Sales	First	High	Low	Last	Ch'ge
10	4¼	7	4	10	Ark. Nat. Gas	1,145	5½	5⅝	x5⅜	5⅜	— ⅛
33⅜	33	40½	35⅜	N.P.	Columbia Gas						
		30	30	25	Fayette County Gas.						
27	22¾	33¼	26½	25	Lone Star Gas	4,921	32½	32½	31	32½	—1
58	51	60¼	51	50	Manuf. L. & H.						
		33¼	28½	25	Ohio Fuel Corp.(W.I.)	4,801	32⅜	32½	32	32⅜	0
19	11	16½	11⅝	1	Ohio Fuel Oil						
66	30¾	40¾	31⅜	25	Ohio Fuel Supply						
24	18⅝	28½	22⅜	25	Okla. Nat. Gas	690	28	28	27	27	—1
10½	5¾	9¾	6	5	Pittsburgh O. & G.	420	8	8	7½	7½	+ ½
14	5½	10½	6½	10	Salt Creek Cons.	4,432	6⅝	6⅝	6½	6½	0
13½	7	16½	9½	10	Tidal Osage	10	10	10	10	10	
		92	92	100	do pfd.						
29½	23¾	35½	27⅜	25	Union Nat. Gas						

Pittsburgh Curb Market

1923 High	1923 Low	1924 High	1924 Low	Par Value	Stocks	Transactions Week Ended Dec. 12 Sales	First	High	Low	Last	Ch'ge
		2½	2½	N.P.	Arkansas Fuel w.i.						
		14	14	25	Barnsdall B						
1½	.22	.76	.20	5	Colombia Synd.	36,400	.50	1.00	.50	.94	+.49
2⅜	.26	.70	.25	5	Duquesne Oil						
37	10	9½	5½	10	Forest Oil						
1¼	1	.15	.15	1	Grant Oil						
68	46½	66½	57	25	Gulf Oil Corp.						
.03	.02			1	Homer Union						
24½	16⅛	28¾	21	N.P.	International Pet.						
		4½	4½	N.P.	Lago Petroleum						
		65	64½	50	Manuf. L. & H.						
8½	4	6	5	10	Marshall Oil						
.36	.15	.39	.01	1	Mex. Wyoming						
		18	18	10	Mountain Prod.						
		30	29½	825	Ohio Fuel Corp.						
		41¾	40	25	Ohio Fuel Supply						
2½	1⅛	2⅞	1⅛	1	Oklahoma Eastern	200	2¼	2¼	2¼	2¼	— ⅛
2	.60	.77	.45	10	Omar O. & G.						
22½	7	8	4	5	States Oil	600	4	4	4	4	0
		14	10	10	Tidal-Osage. N. Y.						

*New High †New Low x Ex Dividend

First and Last—

Steel Supports Cost Less

GRAVER Steel Supports, which are shipped knocked down, can be shipped on the same car with your tanks. When your shipment arrives, you don't have to wait for dry or warm weather for erection. The concrete footings can be put in at any time, without forms, and the entire support erected with a monkey wrench—the only tool required.

When erected, the flat top allows the tank to be rolled easily into position. Unlike the curved-top support, the Graver Support requires no jockeying to get the tank into exact position.

If you move to a more advantageous location, you don't have to scrap a steel support. Take it down and move it with your tanks.

Graver Steel Supports will save you their cost. Write for prices and specifications.

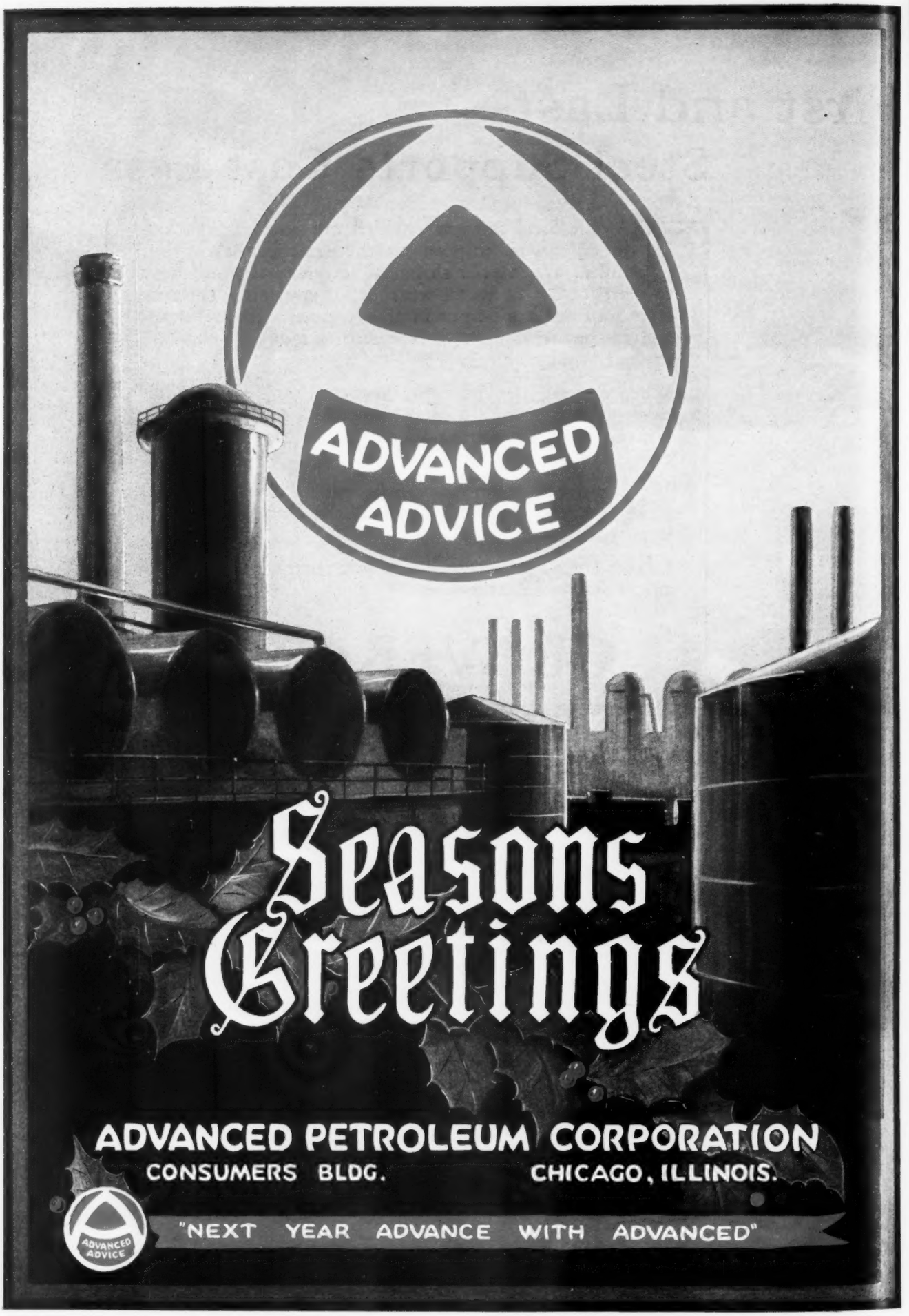
GRAVER *Corporation*

(WM. GRAVER TANK WORKS · FOUNDED 1857)

Steel Tanks and General Steel Plate Construction
Water Softening and Purifying Equipment

1920 Todd Avenue, East Chicago, Ind.

NEW YORK CHICAGO TULSA HOUSTON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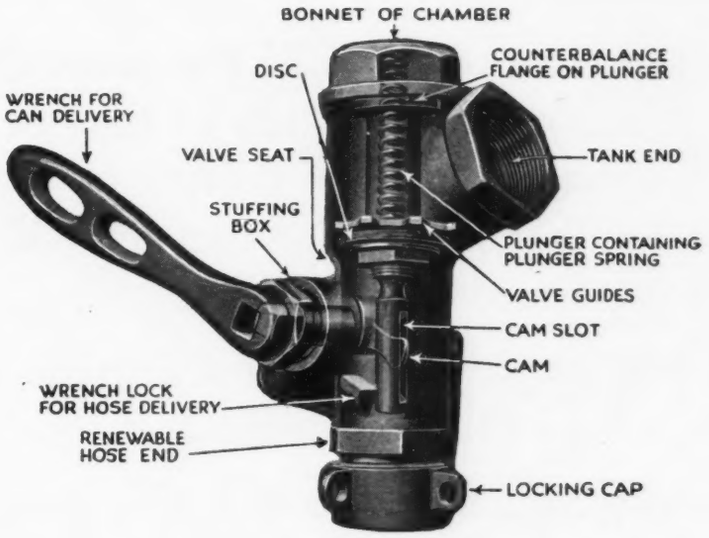
Seasons Greetings
ADVANCED PETROLEUM CORPORATION
CONSUMERS BLDG. CHICAGO, ILLINOIS.
"NEXT YEAR ADVANCE WITH ADVANCED"
ADVANCED ADVICE



It's Counterbalanced!

WHEATON FAUCETS are recognized as the highest quality faucets on the market—a distinction earned by twelve years of unmatched service. Is it any wonder, then, that this Wheaton No. 24, with such a family reputation back of it, should be so much in demand?

You will observe the counterbalance flange on the upper end of the plunger shown in the illustration above. This flange *slows* the shut-off action. Also when the valve closes —when the plunger goes down—the chamber above the counterbalance flange must fill, and to do so the liquid must pass between the close-fitting flange and the chamber walls. This further slows the shut-off action. Together, these features make the Wheaton No. 24 the smoothest, easiest operating faucet ever developed. And, not only does this slow action relieve the faucet and connections of jar, it adds life to the valve disc.

Two styles of wrenches are made—one for can delivery which the driver must hold and one for hose delivery which the driver must lock open. Send for sample of either the 1½″ or 2″ size of this Wheaton No. 24 and give it your own test.

A. W. WHEATON BRASS WORKS, NEWARK, N. J.

Wheaton

When you crack Gas Oil, the more Gas Oil you have left from the products of the operation, *once through*, the greater the burden of the operating cost on that portion of the Gas Oil which is actually converted into gasoline

When you crack Gas Oil and degrade a good portion into Fuel Oil you do so at a loss

Either way you face the old skimming plant problem of the gasoline carrying the whole burden and when the gasoline produced is only 30% of the original charge it is not enough to carry the load

When you crack Fuel Oil and produce only gasoline, stove distillate and Gas Oil, all of greater value than the Fuel Oil charging stock, you have a profit on all products made

This is only possible by the non-residuum runs using Fuel Oil as charging stock and non-residuum runs are only possible with the Dubbs Process

You can also make non-residuum runs with the Dubbs Process using Gas Oil as charging stock if you wish, but the lower the cost of the charging stock the larger your profit on the gasoline produced

Universal Oil Products Company
Owners of the Dubbs Process
312 South Michigan Ave
Chicago Illinois

A Car of Champlin Straight Run Gasoline Will Convince You!

You no doubt have heard Champlin Straight Run Gasoline recommended and have probably thought of trying it just to see if it's as good as it's talked up to be.

Why not try a car now?

You'll find Champlin Straight Run Gasoline some of the finest made anywhere—with very few equals! One car will convince you of this—and you can depend on every other car of the same grade you buy being exactly the same as your trial car.

Wire for prices on Champlin Straight Run Gasoline now. See for yourself just what there is to Champlin Straight Run!

CHAMPLIN REFINING CO
PETROLEUM PRODUCTS
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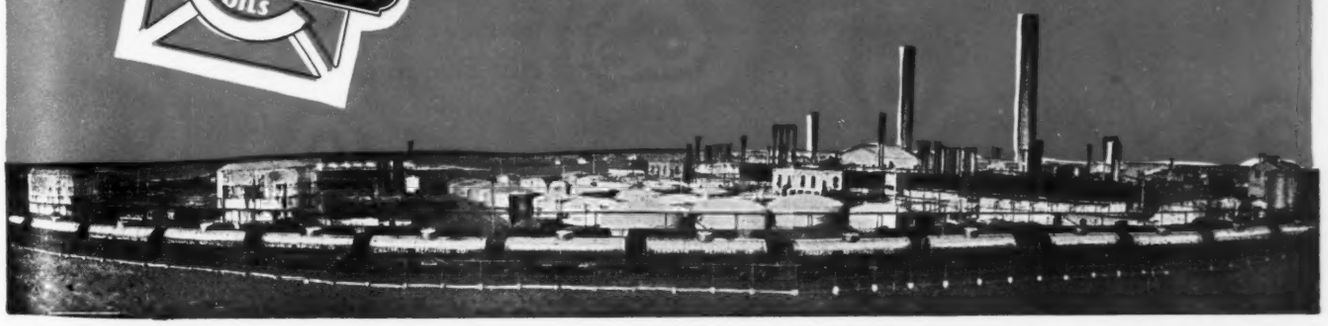
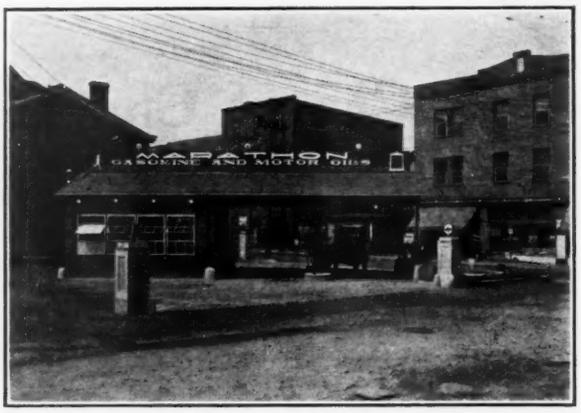
CHAMPLIN PRODUCTS

- Gasoline
- Kerosene
- Gas Oil
- Fuel Oil
- Bright Stock
- Non-Viscous Neutrals
- Viscous Neutrals
- Petrolatum
- Paraffin Wax
- Motor Oils
- Tractor Oils
- Steam Cylinder Oils

FOR EVERY USE
CHAMPLIN
OILS



Delta Station at Washington and Market Streets, Petersburg, Virginia



Delta Station at Second and East Bank Streets, Petersburg, Virginia

AT PETERSBURG—

GASOLINE—
Clean, sparkling, sweet
KEROSENE—
Of exceptional power and quality

Motor and Tractor Oils
Steam Cylinder Oils
Engine and Dynamo Oils
Refrigerating Oils
Diesel Oils
Turbine Oils
Neutrals
Bright Stocks
Cylinder Stocks
Fuel Oils
Wax
Grease

Lubrication for every purpose

in old Virginia, the *Delta Oil Company* has had a phenomenal growth in the marketing field. Since 1918, when Mr. S. D. DeShazor, with one 8,000 gallon storage tank and a small delivery truck, started to sell gasoline, his organization has advanced steadily. Today the *Delta* ranks with the largest and most prosperous retail companies in the state.

Such remarkable success must have had as its underlying factor, a keen sense of good business judgment. Mr. DeShazor, however, maintains that the Marathon Runner, which typifies our quality products, should receive a lion's share of the credit. And we think that anyone with such proven ability has a right to his own opinion!

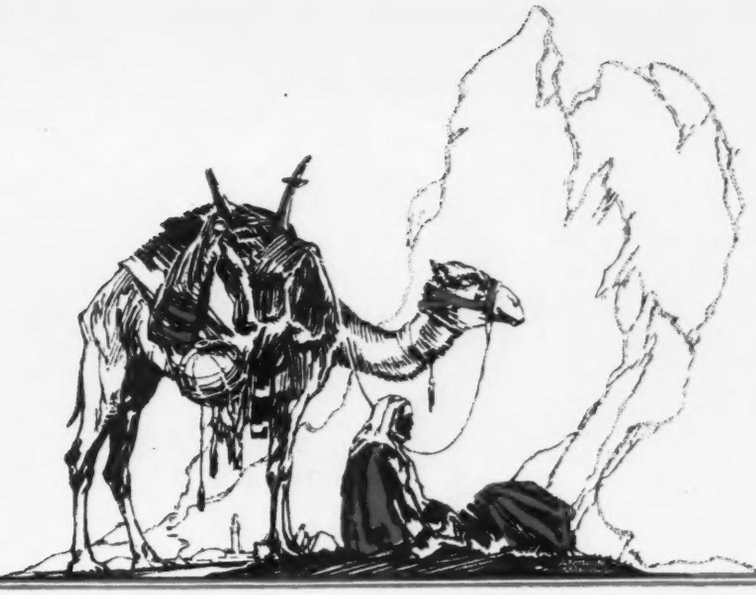
TRANSCONTINENTAL OIL COMPANY

Executive Offices:
Benedum-Trees Building, Pittsburgh

Sales Offices:
Atlanta, Chicago, Des Moines, Fort Worth, Muskogee, Okla., New York, Pittsburgh, Sioux City, Tulsa

Refineries:
Boynton, Bristow, Fort Worth

Warehouses at convenient shipping points



I pray the prayer that Easterners do · May the peace of Allah abide with you · Wherever you stay wherever you go may the beautiful palms of Allah grow; Thru days of labor and nights of rest, The love of Good Allah make you blest. So I touch my heart --as the Easterners do -- May the peace of Allah abide with you · · · · · ·

· · · · · A Christmas wish from the makers of TRIPLEXD HOSE

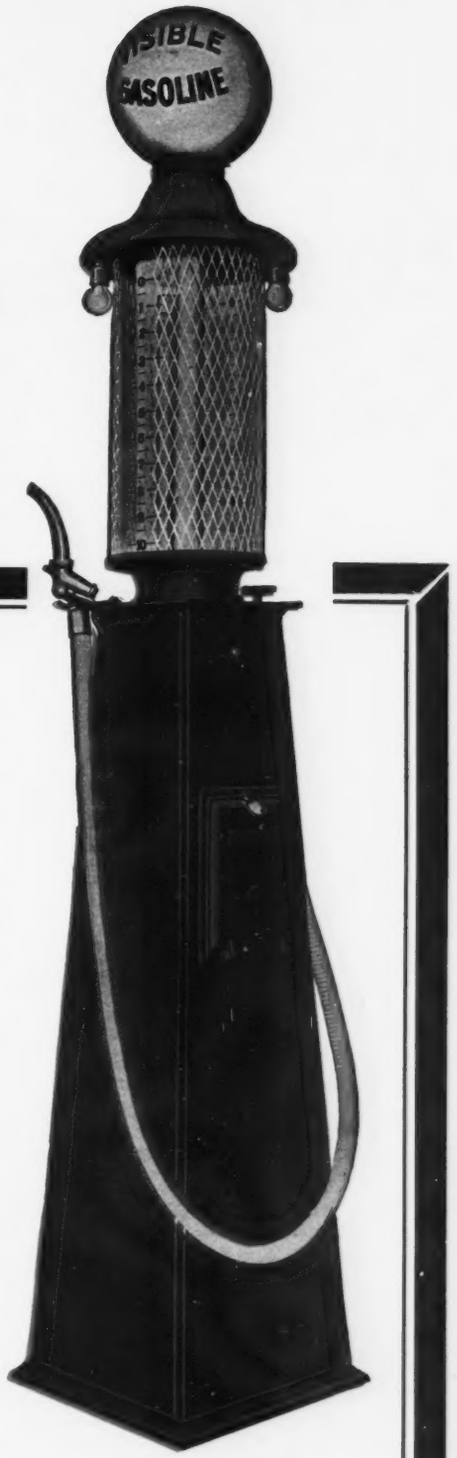
METAL HOSE & TUBING CO.
INCORPORATED
RAYMOND & TILLARY STREETS
BROOKLYN, N.Y.

SHELL
GASOLINE
Shell Quality and Service are Unique
ROXANA PETROLEUM CORPORATION
HEAD OFFICE ◆ ARCADE BUILDING ◆ ST. LOUIS, MO.
Branch Sales Offices: ◆ ◆ ◆ Chicago, Ill., 624 South Michigan Ave. ◆ ◆ ◆ Kansas City, Mo., Federal Reserve Bank Bldg. ◆ ◆ ◆ Tulsa, Okla., Mayo Bldg. ◆ Indianapolis, Ind., Meyer Kiser Bank Bldg.
Refineries: Wood River, Illinois ◆ Arkansas City, Kansas
ADDRESS ALL COMMUNICATIONS TO ST. LOUIS OFFICE
GASOLINE ◆ ◆ MOTOR OIL
KEROSENE ◆ ◆ GAS OIL
FUEL OIL ◆ ◆ ROAD OIL
FURNACE OILS ◆ DISTILLATES
Perfect purity that's the point
SHELL

HAYES

PRICES GUARANTEED FOR 1925

Six of the largest Oil Companies have placed orders covering their full requirements of HAYES Filling Station Equipment for 1925.



This means that they expect prices to go up

We Will Protect You

on the same basis. Orders entered NOW at present LOW PRICES may be scheduled for delivery ANY TIME DURING 1925.

We have bought materials and are accepting deliveries far in advance of our present manufacturing schedules. When these stocks are covered by orders, prices on the things we make must be advanced. First come—first served. And remember that this offer may be withdrawn without notice.

Write today for prices on your requirements for 1925

Hayes Equipment Manufacturing Co.
624 East Gilbert St. WICHITA, KANSAS

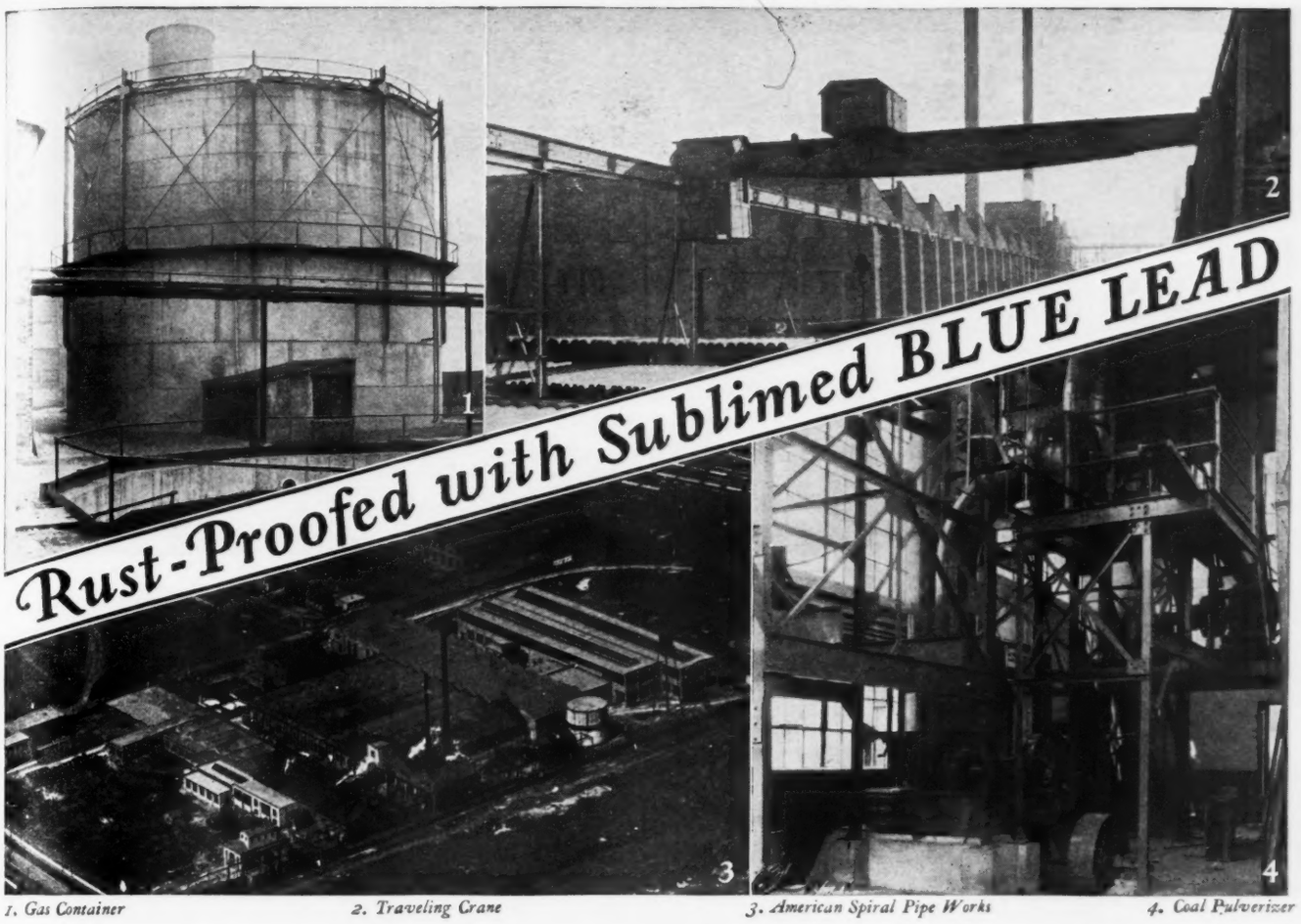
Bat's

grease

Profit Producing Products —

The BATTENFELD GREASE AND OIL COMPANY
KANSAS CITY, MISSOURI

"Business is Ingreasing"



1. Gas Container *2. Traveling Crane* *3. American Spiral Pipe Works* *4. Coal Pulverizer*

Rust-Proofing Worries Were Ended at This Plant in 1910

FOR fourteen years the American Spiral Pipe Works has standardized on Sublimed Blue Lead in Oil for all rust-proofing purposes. Exposed to many different conditions, indoors and out, to excessive heat and corrosive gases as well as to the corroding action of the elements, Sublimed Blue Lead in Oil has successfully met every requirement for a rust-inhibitive paint at this plant. Today they say:

> "Over a period of more than 14 years, since 1910, Eagle-Picher Sublimed Blue Lead has proven to be the most satisfactory and durable rust-proofing pigment that we have ever used on the various steel structures about our plant, exposed to many different conditions."—American Spiral Pipe Works.

Sublimed Blue Lead in Oil works so easily and smoothly under the brush that a painter can cover a greater area in a day and still produce a paint film that is free from breaks, runs, or alligatoring. The paint film is properly elastic and virtually insensible to changes in temperature.

One hundred pounds of Sublimed Blue Lead in Oil will cover 5216 square feet of iron or steel. This is equivalent to a surface a foot wide and nearly a mile long. It will not harden in the container.

The durability of Sublimed Blue Lead in Oil as a long-time protector of metal surfaces has been proved both in technical tests and in the field.

Send for your copy of "Fighting Rust with Sublimed Blue Lead."

The EAGLE-PICHER LEAD COMPANY · 866-208 *South La Salle Street* · CHICAGO

Send for "Fighting Rust with Sublimed Blue Lead" —a Rust-Proofing Manual

EAGLE *Picher Sublimed* BLUE LEAD *in* OIL

CINCINNATI CLEVELAND PITTSBURGH PHILADELPHIA NEW YORK MINNEAPOLIS
BUFFALO DETROIT BALTIMORE NEW ORLEANS KANSAS CITY ST. LOUIS JOPLIN

Plants: CINCINNATI NEWARK GALENA, KAS. HENRYETTA, OKLA. PICHER, OKLA.
EAST ST. LOUIS, ILL. CHICAGO ARGO, ILL. JOPLIN, MO. HILLSBORO, ILL. (2 *Plants*)

HM
LM
PALO
114

THERE'S one word that *must characterize* the stocks you use for compounding your motor and industrial oils—one word if you would have your oils mean all they should to your trade.

It's Precision!

Precision in Conewango cylinder stock, HM—LM—Palo and 114, was not attained over night, nor in a day nor in a month. There was no hot-house method. Precision was developed by experience (over 20 years of it) and has been maintained by eternal vigilance!

Not alone the high viscosity and low cold test, the resistance to emulsification, the minimum carbon content—not these alone (important as they are) have builded the reputation which these famous Bright Stocks enjoy throughout this country and even Europe.

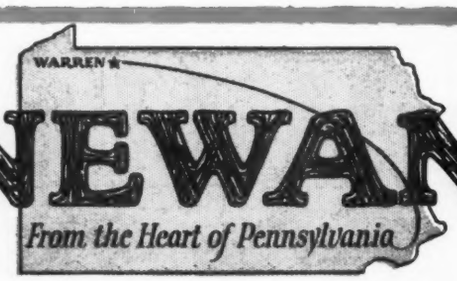
Guaranteed 100% PURE PENNSYLVANIA OIL
PERMIT NO. 4

Back of all this first came precision in manufacture. And foremost it stands today—your assurance of uniformity of specifications day in and day out in the "World's Finest Lubricants".

These four base oils can be furnished in tank car or carload drum lots. Wire, write or phone for samples and prices.

THE CONEWANGO REFINING COMPANY
Warren, Pa.

QUALITY OIL HEADQUARTERS



CONEWANGO

From the Heart of Pennsylvania

NORTHLAND OIL CO.

Producer of Lakeside Aviation Oil

Uses

Blaw-Knox Forge and Hammer Welded Jenkins Stills

BLAW-KNOX COMPANY

623 Farmers Bank Bldg., PITTSBURGH, PA.

NEW YORK—30 E. 42nd St. BALTIMORE—Bayard & Warner Sts. CHICAGO—Peoples Gas Bldg.
DETROIT—Lincoln Bldg. BIRMINGHAM—American Trust Bldg. BUFFALO—Genesee Bldg.
LONDON, ENG.—Caxton House

BLAW-KNOX FORGE and HAMMER WELDING

One-Piece Seamless Bottle-tight

The New Orleans, Pioneer Circumnavigator of the Globe, Via Air, and Model 33 International Motor Truck, at a Mid-Continent Refueling Station.

THE romantic aspects of the world flight have been celebrated to the ends of the earth, to the neglect of the great structure of organization that underlay the flight around the globe. Yet without this superb terrestrial support the planes would be more helpless than the ambitious barnyard fowl whose wings are clipped to keep him at home.

Heavy-duty International Motor Trucks in the service of the oil companies rubbed noses with the resting planes, we do not know at how many points. We know, however, speaking of world-span, that International Trucks are at work today in 26 nations and that in the United States many thousands of them are at work in the various phases of the oil industry.

International Heavy-Duty Trucks are built in 3000, 4000, 6000, and 10,000 pound maximum capacities with bodies to meet every requirement. There is also a sturdy Speed Truck for loads up to 2000 pounds. Possessors of a reputation for low-cost hauling and for long life. Write us regarding any model and for the address of the nearest showroom.

INTERNATIONAL HARVESTER COMPANY
of America
(Incorporated)
606 So. Michigan Ave. Chicago, Illinois

INTERNATIONAL HARVESTER COMPANY TRUCKS

Kerosene That Stands The Test

Even a poor kerosene will burn, after a fashion, and furnish some light and heat. But kerosene today must do *more than furnish light and heat;* it must stand the test of use in the many kerosene burning tractors and stationary engines on the farms of this country. Only properly refined and treated kerosenes will stand the real test of use.

The 42/44 kerosene marketed by us for the Kettle Creek Refining Company of El Dorado and the 41/43 kerosene for the Imperial Refining Company of Ardmore is manufactured in appreciation of this fact. The kerosene produced by both refineries is a water white kerosene, fully treated and doctor test. It gives maximum burning efficiency.

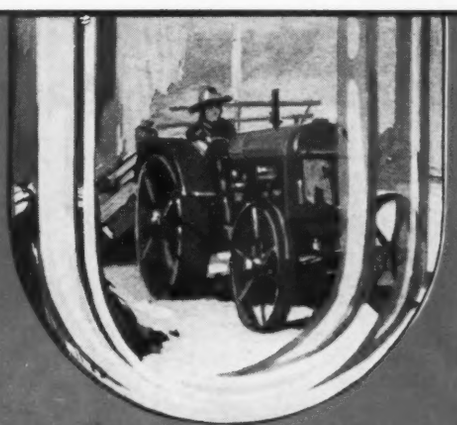
High Quality Gas Oil, Too

Both these refineries also manufacture a 32/36 gravity, straight run gas oil, that fully meets all specifications for gas making purposes as well as for fuel and power purposes.

These two refineries market their entire output of 10,000 barrels of refined product per day exclusively through us.

With ample storage and plenty of our own tank cars, we can give you an exceptional service on this Kerosene and Gas Oil that stands the test.

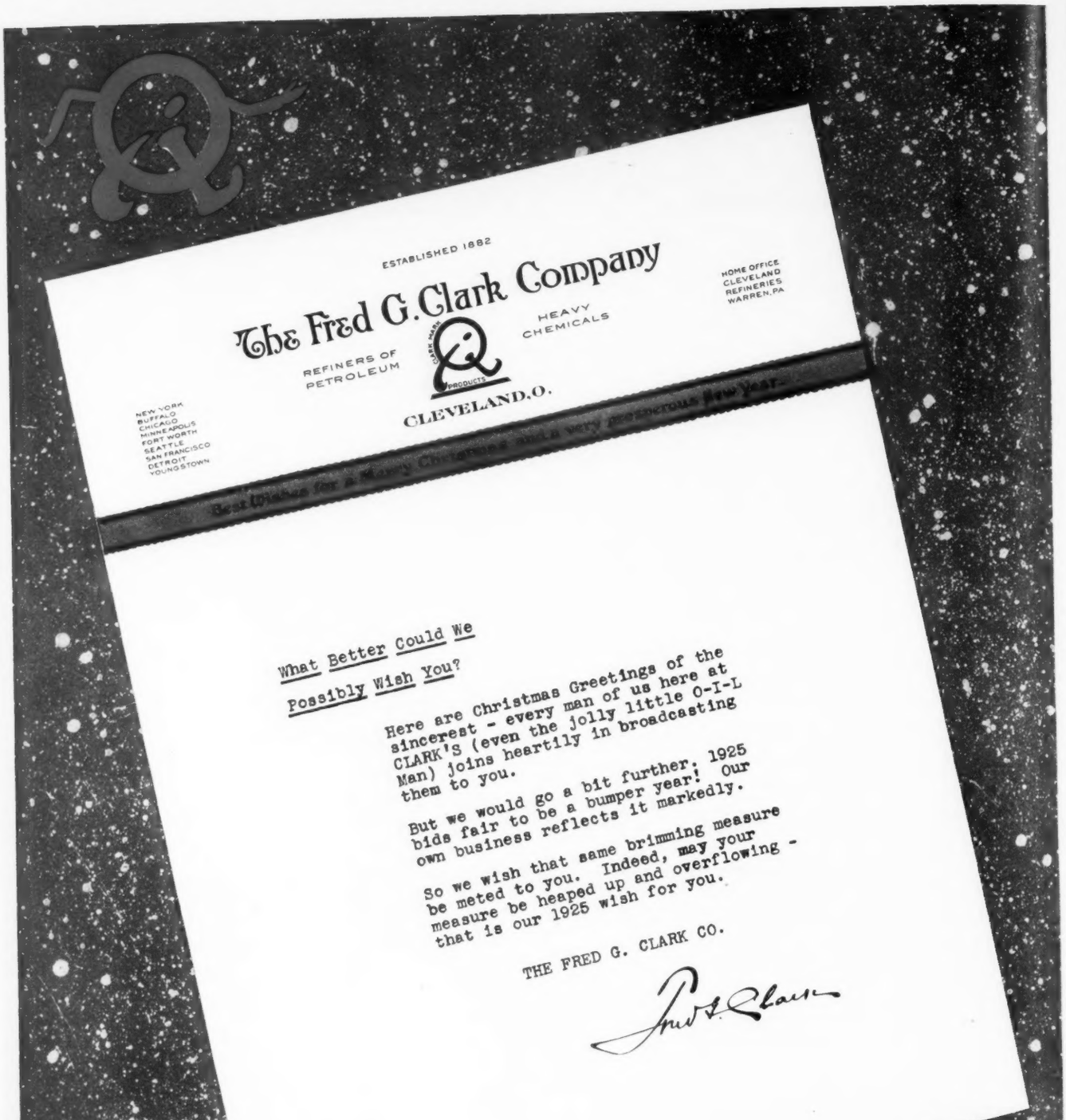
H-232



IMPERIAL
OIL MARKETING COMPANY

General Offices—Atlas Building, Tulsa, Oklahoma

GASOLINE KEROSENE NAPHTHA GAS OIL DISTILLATE FUEL OIL ROAD OIL


ESTABLISHED 1882
The Fred G. Clark Company
REFINERS OF PETROLEUM
HEAVY CHEMICALS
CLEVELAND, O.
HOME OFFICE CLEVELAND
REFINERIES WARREN, PA
NEW YORK
BUFFALO
CHICAGO
MINNEAPOLIS
FORT WORTH
SEATTLE
SAN FRANCISCO
DETROIT
YOUNGSTOWN
What Better Could We
Possibly Wish You?
Here are Christmas Greetings of the sincerest - every man of us here at CLARK'S (even the jolly little O-I-L Man) joins heartily in broadcasting them to you.
But we would go a bit further; 1925 bids fair to be a bumper year! Our own business reflects it markedly.
So we wish that same brimming measure be meted to you. Indeed, may your measure be heaped up and overflowing - that is our 1925 wish for you.
THE FRED G. CLARK CO.
THE FRED G. CLARK COMPANY